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Therapeutic and Preventive Medicine.

THE TREATMENT OF NEPHRITIS.*

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It may sound too general to speak of the treatment of nephritis as a whole rather than specifying the different types. However, although in the majority of cases we may (and do) differentiate between chronic and acute,—and although it is either the interstitial or the parenchymatous tissue which is chiefly involved, yet we really never find the pathological process affecting one form of tissue only and the other remaining perfectly sound. Furthermore, nephritis is not a sharply localized condition, such as an abscess or a fracture, but is either a cause of disturbance in other organs; or is coincident with lesions elsewhere; or is caused by some pathological condition affecting other tissues as well. For example, nephritis is causative of a train of symptoms from its effects on other organs (such as optic neuritis); as an example of the second possibility our term "cardio-renal" brings up a more or less distinct picture in our minds, showing the possible co-existence of lesions in both heart and kidneys; and, lastly, I merely have to mention chronic interstitial nephritis to demonstrate that a diseased kidney may be secondary to the sclerosed condition of the tissues of the circulatory system and indeed of the

whole body. Therefore, it is eminently fitting that we consider *treatment* rather than *cure*, and that we study the patient's general condition as well as his nephritis.

Disease of the kidneys was recognized among the ancients and certain principles of treatment, such as purging, bleeding, and, to a certain extent, diet, date back to the earliest days of medical science. In fact it may be said that in a way comparatively little has been added except in nature of elaboration, especially in the details of diet. To be sure, methods of diagnosis have become more exact,—as the chemical and microscopic examination of the urine and our tests of the functional ability of the kidney with phenolsulphonaphthalein. Most recently we have seen the practical application, in the work of Ambard, Weil, Folin, and others, of Ambard's law that the excretory power of the kidney follows definite rules which are capable of numerical expression.

Because the kidney is one of the excretory organs of the body, our first thought in disease is usually to relieve it by transferring as much of its work as possible to other organs of elimination, such as the bowels, skin, etc. This is particularly true, because prevention is out of the question in practically all of the cases we meet. We can, of course, in acute infectious cases employ such drugs as hexamethylenamin and salol for the purpose of disinfecting the urinary tract, and in the so-called idiopathic cases (usually due to the *bacillus coli communis*) we may derive some benefit thereby. Surgical measures such as capsule-splitting and decapsulation are of demonstrated value in selected cases.

* Read before the Merrimack County Medical Society at Concord, N. H., October 12, 1915.

Bleeding and lumbar puncture are methods of symptomatic treatment, particularly in uraemia but they are of use *only* in the sthenic form where the systolic blood-pressure is as high as 200 mm. In the asthenic type of uraemia hot packs, hot enemata, and pituitrin are of chief value. Increased elimination through the bowels is of the greatest value. Of course by that I mean not merely purging of a uraemic and oedematous patient but also the careful daily attention to the bowels in the chronic cases.

The second method of affording relief to the diseased kidney is to make elimination as easy as possible largely by regulating the diet, and in this, probably, lies our greater interest. The "salt-free" diet we need not consider at great length, as its uses are restricted and it is applicable chiefly to the reduction of oedema. That it may be followed too rigorously we should recognize, however. This was brought to my mind most forcibly a few years ago by a case which I regret I cannot describe more exactly.

The patient was a woman of about 50 years, who had an interstitial nephritis and also a mitral insufficiency. About three months previous to my seeing her she had been placed upon a strict salt-free diet with the idea of reducing her marked oedema. This object had been accomplished to a great extent and the patient was still following the diet faithfully. She was also getting digitalis and strychnia. Although there were no definite changes in her heart or kidneys, the patient had been getting steadily worse for the past two or three weeks, the striking feature beside her increasing weakness being her marked mental failure (her memory became exceedingly poor, she gradually lost power of recognizing people, and what had at first been apprehension and irritability, developed into hallucinations and even a tendency to violence). One striking feature in her physical condition (and practically the only definite change noted) was her tongue, which had become deep red and dry, and had markedly enlarged papillae—it was the tongue seen in sepsis and in arsenic poisoning. Previous to her mental breakdown and during most of her lucid intervals since, she had complained of her diet and had begged for salt. Because of her apparently hopeless condition she was allowed a liberal amount of salt and almost immediately began to improve. I was unable to follow her afterwards, but I do know that she spent last summer at the shore and was able to enjoy motoring, driving, etc.

A diagnosis of "salt-starvation" was certainly logical in this case.

It is in the more general principle of reducing the protein part of the diet that our chief interest lies, but we have fallen perhaps too much into the habit of thinking of diet in terms of calories and the number of grammes of carbohydrates, etc., forgetting the variations and idiosyncrasies of different individuals. Indeed, we are prone to be too much impressed by the disease and so neglect the patient. Also, with all our precision it may well be that our system of dietetics is but a half truth, and that

further research will change many of its apparently basic principles.

Last June in the Shattuck lecture* before the Massachusetts Medical Society, Dr. Joel E. Goldthwait discussed, among other things, the type of the individual as having a direct relation to diet. Briefly, he suggested that the carnivorous type required a greater relative amount of protein than could be tolerated, with the best results, by the herbivorous type. Whether these suggestions are capable of universal application, it is too soon to say, but that they possess value is indicated in some of the cases which we see almost daily. At any rate, we must not adopt so rigorous a system of diet in our eagerness to combat the disease that the patient suffers from his treatment as well as from his nephritis.

That a business or professional man of middle age who shows the slightest possible trace of albumin in his urine with an occasional hyaline cast, and whose systolic blood-pressure ranges about 180 or 190 mm. of mercury, is not going to be improved on diet of bread and milk it is needless to say. Indeed, restricting the protein intake to 75 or 80 grammes daily may prove too small for certain individuals to produce the best general results. As an example, however, of benefit coincident with (if not due to) an increase in the protein allowed, the following case is mentioned briefly:

The patient was a boy fourteen years old, who entered the Hospital with an acute nephritis, probably of about three weeks' duration, and due to a severe tonsillitis immediately preceding. His urine was high colored, showed a large trace of albumin, and, under the microscope, the fields were covered with erythrocytes, and also numerous leucocytes, renal cells and hyaline and granular casts. His systolic blood-pressure was 175 and his diastolic, 150. He was put upon our "acute nephritis diet," which is largely milk and cream, containing only about 35 grammes of protein. At the end of seven weeks of this diet and being kept in bed, his condition was practically unchanged. His systolic blood-pressure had fallen to 135 but his urine still contained a large trace of albumin with the same microscopic findings as at entrance.

Partly with the idea of experimenting, I tried increasing his protein, first by adding one cup of broth (about eight grammes) daily. As his urine within two or three days began to clear, I added other proteins until he was eating the ordinary diet,—eggs, meat, fish, etc. Within three weeks his urine showed only the slightest possible trace of albumin with a rare erythrocyte and very rarely a hyaline and finely granular cast. The marked improvement (particularly in his general condition) during the three weeks of liberal dieting, as compared with the seven weeks during which his condition remained absolutely unchanged, is at least suggestive of the virtue of more latitude in our method of dieting.

Besides these methods of reducing the work of the kidney either by lessening its burden or by transferring a part of the load to other organs, the possibility of increasing elimination

* See JOURNAL, June 17, 1915, Vol. cxlii, p. 881.

through the kidney itself is suggested, and here we must go back a step before the process of elimination. In other words, we must consider the *metabolism* of the body and what methods we may have of influencing it. In thyroid extract we possess a drug which profoundly affects the body's metabolism. It causes a loss of weight; it increases the output of nitrogen in the urine (by increasing the waste-products of the body-proteids); it increases the oxidation of fats and carbohydrates; and hastens the elimination of fluid from the body by its diuretic action. (This diuretic action is probably due to the increased excretion of urea.) Also it lowers the blood-pressure at the same time accelerating the pulse-rate.

In spite of the experimental work done in establishing these facts of its effect on the elimination of urea, etc., no application to the treatment of nephritis was made of thyroid extract, to my knowledge, until, in 1912, J. F. Percy presented a series of 35 cases in which he had administered it with striking results.¹ His first case was a man weighing over 200 pounds, whose urine showed 4% of albumin, with numerous hyaline and granular casts, and who also had a large cystic goitre. Coincident with this patient's taking thyroid extract for his goitre, Dr. Percy noted that his nephritis, which had hitherto resisted treatment, began to show marked improvement, so that at the end of about a month his urine contained no albumin and no casts. This led Percy to use thyroid extract in large doses on all his nephritides, the cases being "taken as they come," to use his expression, and irrespective of the stage or type of the disease. He summarized his results by saying that "all have responded in the same remarkable way and none has died." In a later paper² he added to his list of cases and recommended the use of this drug in preparing nephritides for operation.

During the past three months I have tried administering thyroid extract to some of my cases of nephritis at the Boston City Hospital, but I did not have sufficient courage to employ the large doses suggested by Percy. Although my results were not uniform and although the study of the patients was necessarily incomplete in some instances, yet almost every case showed certain phenomena which were notable and at least *suggestive* of beneficial results of the medication. (I use the phrase "*suggestive* of beneficial results" advisedly, for in the first case of which I shall speak, the patient could not tolerate the drug, apparently.)

He was a man of 39 years, rather poorly developed and nourished. He showed moderate dyspnea and orthopnea, and was cyanotic. His lungs showed a moderate amount of oedema. His cardiac dullness extended from four cm. to the right of the mid-sternal line to 13½ cm. to the left. It was regular, both second sounds were accentuated and there was a loud blowing mitral murmur. His systolic blood-pressure at entrance was 225 and his diastolic 90. His urine showed a trace of albumin with many

blood and renal cells and numerous casts of different kinds. With phenolsulphonphthalein his renal function was found to be 15% at the end of two hours. His blood urea (nitrogen) was 35.5 mgm. per 100 cc.; his nitrogen index was 15% and his chloride retention .335 gm. per liter. He had moderate oedema of the legs. That his nephritis was of long standing (years) was shown by his history, and also by the presence of a marked optic neuritis.

He was given thyroid extract only after the ordinary methods of diuresis and purgation and the administration of digitalis and nitroglycerine had failed to cause any definite improvement. Following the administration of two grains of thyroid extract three times a day for two days, his systolic blood-pressure had fallen to 130. The albumin in his urine decreased to a slight trace and the cellular elements were noticeably fewer. However, his pulse had risen to 110 from 85 and he complained of weakness, headaches and fluttering of his heart, and so the drug was omitted. A week later thyroid extract was again tried, this time the maximum daily dose being grains three. It had to be omitted again, however, after less than a week, because of the return (in lesser degree) of his headaches and weakness. It had evidently had less effect on him this time, as his pulse had varied but little and his blood-pressure, which had risen again to 238, remained 200 or over during the rest of his stay in the hospital. His urine, however, had almost entirely cleared up during this second attempt at thyroid medication, and showed only the slightest possible trace of albumin with very few cellular elements.

In the next case, which I shall consider briefly, the results in the patient's general condition and appearance were more striking, but they were less definite in absolute clinical findings.

He was a male, 18 years old, and the only etiology we could discover for his nephritis was "fever and convulsions" occurring at four years of age. He was moderately prostrated, and had some dyspnea. His heart measured four cm. to the right of the mid-sternal line and 15 cm. to the left, but no murmurs were heard. He had considerable thickening of the radial arteries; his systolic blood-pressure was 200 and his diastolic 150. His urine was that of a chronic interstitial nephritis with the slightest possible trace of albumin, no erythrocytes and only an occasional hyaline cast. He was passing about 2500 cc. in the 24 hours. He was kept in bed on a strict nephritic diet, but left after two weeks, against our advice, having made practically no improvement.

A week later he returned, showing more marked dyspnea and orthopnea, and complaining of nausea, and some vomiting, vertigo, blurred vision and marked headache. His urinary findings were the same as before. With phenolsulphonphthalein his renal function was found to be *nothing* at the end of two hours. He was given thyroid extract beginning with one grain three times a day, and increasing it daily until he was getting four grains three times a day. Within a week his renal function had reached nearly 10% in two hours and his general condition had improved marvelously. His headache, vertigo and nausea disappeared rapidly, as did his uraemic appearance, leaving him bright and cheerful. On account of his rising pulse-rate, the thyroid was omitted, and within two or three days he

had lapsed into his former condition. Twice since then thyroid has been given him with the same marked improvement in symptoms, and twice, also, has it been omitted because of its apparent toxic effect on his heart.

The next case was a man of 20 years, who entered the Hospital with a severe polyarticular arthritis, the infection having entered probably through his tonsils, which were large and ragged, and had crypts filled with exudate. At the end of a week his joints had cleared up under salicylates, but he then had an acute nephritis, with a trace of albumin, considerable blood, some pus, many renal cells and casts in his urine. His heart measured 2 cm. to the right of the mid-sternal line and 12 cm. to the left; the action was regular; the sounds were clear and there were no murmurs. His systolic blood-pressure was 130 and his diastolic, 85. The rest of his physical examination showed nothing abnormal except moderate oedema of his legs. He was put upon a diet restricted to about 40 grammes of proteid and was given free catharsis.

At the end of six weeks he had made no progress toward improvement except for a decrease in the amount of blood and pus cells in his urine, and so thyroid extract was given in daily increasing doses until he was getting five grains three times a day. Within three weeks his renal function had increased from less than 5% in two hours to about 25%. His blood urea nitrogen dropped from 51.25 mgm. per 100 cc. to 30.25 mgm. in 100 cc.; his nitrogen index increased from 5.9% to 16.6%; and his chloride retention from .093 to .277 gms. per liter. His blood-pressure remained the same. His oedema disappeared.

He left the Hospital against advice, returning four days later with considerable oedema of his legs, but otherwise practically the same. His renal function, determined by phenolsulphonephthalein, was then about 15% at the end of two hours. He was given 15 grains of thyroid extract daily and put to bed. At the end of five days his oedema had entirely disappeared, and two days later he was allowed up and about the ward with no ill effects. Within two weeks after entrance his renal function was 32% at the end of two hours. Incidentally, he was allowed a liberal diet practically since the beginning of his thyroid medication.

Two other cases showed rapid disappearance of their oedema coincident with their getting thyroid extract, one case being particularly striking, as he had shown very slow improvement while in the Hospital with a previous similar attack.

One case recovered from uraemia, whereas he had been growing steadily worse and apparently was moribund until thyroid extract was added to his treatment.

Another discharged patient who returned weekly to the Hospital for observation showed a fall in systolic blood-pressure from 195 to 150, but discontinued his thyroid extract himself because of a "fluttering sensation" in his heart.

None of the cases has died.

The cases cited above are far too few in number to be of service in drawing any very definite

conclusions, but certain things are surely suggested by them:

1. Any rigorous system of diet may (*but should not be*) so strict or continued so long that it may be distinctly harmful to the individual case.
2. More freedom in the allowance of protein than is recommended in the "text-book" nephritic diet may be of apparently great advantage in the individual case.
3. Thyroid extract has, perhaps, a great value in the treatment of nephritis, one of the commonest and, at the same time, one of our most hopeless diseases.
4. If given carefully, the administration of the drug is safe.
5. Thyroid medication in nephritis should receive more attention than has heretofore been accorded it.

My thanks are due to Dr. John L. Ames for his help with cases, particularly the one of "salt-starvation." The Ambard tests were done at the Peter Bent Brigham Hospital.

REFERENCES.

- ¹ Percy, J. F.: Thyroid Extract in Nephritis, Jour. Am. Med. Assn., Nov. 9, 1912, p. 1708.
- ² Percy, J. F.: Nephritis, Its Treatment with Thyroid Extract as a Preliminary to Operation, Jour. Am. Med. Assn., Aug. 9, 1913, p. 280.

Original Articles.

THE INJURED EMPLOYEE AND THE WORKMEN'S COMPENSATION LAW. RESULTS OF IMPARTIAL EXAMINATIONS.*

By FRANCIS D. DONOGHUE, M.D., BOSTON,

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THE establishment of the workmen's Compensation Act in Massachusetts has brought into existence not only a new method of adjudicating claims for industrial injuries, but also has created synchronously a new and broader field for expert medical service. Two important objects of this law are as follows:—

First.—Injured employees should receive the best medical treatment possible, whereby they may be returned to industry with the least delay.

Second.—Compensation should be paid promptly, when an injury "arises out of and in the course of employment;" should be continued during incapacity for work; and should not be paid when there is no connection between disability and the occupation, or when there is no disability remaining.

As an active force in fostering the spirit of

* This statement was prepared by Dr. Francis D. Donoghue, Medical Adviser, at the request of the Industrial Accident Board, and will appear later with reports of other impartial physicians in the form of a report to the Massachusetts Legislature.

this law the medical profession has the opportunity of rendering a great service. Under the law the Industrial Accident Board has the power of appointing impartial physicians whose advice is taken by the Board on medical questions having to do with treatment, the relation between injury and death, or incapacity, and the cessation or continuance of disability. The majority of cases referred to impartial physicians have involved in them an element of dispute between the insurance company and the injured employee or his dependents. In those cases where one or both of the parties are relying on the opinion of a physician, the opinion of the impartial examiner must be carefully formed. When a physician gives wrong advice in perfectly good faith there is raised a point of dispute which otherwise probably would not occur. This results in friction, delay and injustice to one side or the other.

A clear statement of what is found, a correct diagnosis and the visualization of an injured employee as he is, under working conditions, are essentials to the sort of medical report which is necessary in passing upon cases under the act.

Anything short of this when acted upon, for the time taken in arriving at the true situation, decreases the efficiency of the administration of the act. For every report of this nature which is eliminated efficiency is increased.

From observation in numerous cases examined as an impartial physician prior to becoming medical adviser, certain reasons stand out as an explanation of the absence in some cases of a proper diagnosis, or of the proper application thereof.

Those reasons which stand out as being worth special emphasis are stated below:—

1. In giving treatment there is a possible tendency to overlook details and the relationship of various existent factors which later may be extremely important in passing upon subsequent conditions.

2. A habit of mind acquired from examining cases under the old law in effect prior to the Workmen's Compensation Act may tend to inhibit that process of deductive reasoning so essential under the theory of a compensation system.

3. There is danger in failing to realize that a surgical cure is not necessarily a functional cure; or when this fact is grasped, in not making the matter clear in the report.

4. When there are pre-existing conditions of infirmity the real effect of the injury may be given too great or too little weight.

5. The importance of occupational diseases and other forms of incapacity due to working conditions and materials is not always realized. In these cases considerable care is required to determine whether the industry is the primary or secondary cause of disability, or in no way responsible.

6. At times the conditions as found may not

be all reported, on the assumption that there is no relevance from a legal point of view. Although a knowledge of the act is essential to the best type of report, any assumption that tends to obscure medically what appears to be extraneous legally is beyond the scope of the examiner's duties, and sometimes leads into error.

By and large, the elimination of those causes which increase rather than decrease the number of disputes between the parties under the Workmen's Compensation Act is highly essential. Costs of administration must be kept within reasonable bounds. Insurance companies desire, and should be aided in every way, to understand and to discharge fully their obligations under the law. Injured persons should not be misled into believing that they are more injured than the facts really show. The importance of having these principles carried out is doubtless recognized by all. The medical profession is in a position to be of incalculable service to the successful administration of the act passed by the Legislature for the benefit of the employees of the Commonwealth. Much valuable work has been done, but the aim should always be in the direction of still greater accomplishment.

Certain cases which have come to the attention of the writer while acting in behalf of the Board as impartial examiner and voluntary adviser may prove of interest and value in connection with the subject under discussion. A few of these cases are as follows:—

CASE H. L. In this case the insurance company had stopped compensation and the man was examined by me in October, 1913. The accident happened on Nov. 1, 1912. The employee fell from a staging onto a concrete floor, alighting on his left heel. He had no treatment except massage. The date when compensation was stopped was June 23, 1913.

Examination by x-ray showed a fracture of the os calcis, which was accompanied by formation or development of bony spurs, with a resultant disablement for the performance of the ordinary work of carpenter. Later the employee was operated upon twice at the Massachusetts General Hospital, and on Jan. 1, 1915, was still unable to go to work.

CASE X. This case was referred for examination by an arbitration committee. At the hearing both the insurance company's doctor and the attending physician agreed that the man was malingering, but on examination the facts showed that the employee had a definite myositis of the deltoid muscle accompanied by painful spasm.

This was a case in which the man had been treated for a long period without examination, and, because the man looked well it was assumed that he could work. By reason of the examination made after the hearing treatment directed to the injured muscle was begun, and as a result of this treatment the employee was able to return to work six weeks later.

CASE OF J. H. This man was examined by me on Dec. 9, 1913. He gave a history of having been overcome by smoke fumes, and of being taken to the Boston City Hospital for treatment. He stated that there was something wrong with his stomach and

his head as a result of the poisoning, and that he was unable to stand on account of dizziness. He also said that while coming from the hospital he had fallen down.

Examination in this case showed an advanced case of tabes. On Oct. 7, 1914, this man again appeared with a report based on an impartial examination. Since his first examination he had been employed by another employer who was insured with another insurance company. At this time he gave the history that in April, 1914, he stubbed his great toe, fell, and as a result injured his right leg and the right side of his head. He gave the history of pain in his leg and weakness. He denied any previous claim under the Workmen's Compensation Act, and gave the history of having been operated upon by the doctor representing the insurance company for the removal of varicose veins. He still complained, however, of weakness in his legs. The impartial doctor appointed by the Board as a result of his examination had ordered a bandage for the varicose condition; also this man was examined by an impartial doctor before the Board. All told, he had been examined four times and operated on once without the diagnosis of tabes having been made.

CASE OF F. F. This man was injured on July 27, 1914, as a result of which he received a fracture of both bones of the right forearm with compounding of the right ulna. The case was treated throughout by a doctor representing the insurance company without any x-ray diagnosis of conditions and without the formation of any callus. Compensation had been stopped prior to my examination of Oct. 24, 1914, on the ground that while under the influence of liquor he had fallen downstairs, re-breaking his arm.

Examination by the x-ray showed an ununited fracture of the right ulna and a united fracture of the right radius. Based on the x-ray plate it would seem that the direction of the fracture in the ulna and the direction of the fracture in the radius were on different planes, and if it is possible in a case of this kind that the treatment that would keep one bone in place would tend to throw the other bone out. Now since in this case the radius had united and the ulna was still thrown out it was hard to understand how the second injury could re-break one bone and not rebreak the other. A discussion was held with the insurance company's representative and their doctor. Consideration of the facts and the x-ray plates at this discussion led to the resumption of compensation payments and to an agreement to pay for an operation which should restore the arm functionally.

CASE OF B. M. The accident in this case occurred on July 9, 1914. The injured employee, a man fifty-six years of age, slipped from the step of a wagon to the ground, and was thrown so that he landed in a doubled-up position. He had suffered pain around his body, and was unable to turn over for two weeks. The doctor representing the insurance company reported him fit for work in October. The employee went back to work for three days shovelling coal; he then strained his back again so severely that he was unable to turn while in bed. As a result of the re-injury he had pain around his body and down his left leg. This employee was examined by me on Nov. 24, 1914.

The examination showed that the man had a flat, rigid lumbar spine, without evidence of injury to the sacroiliac joints. He had marked spasm of muscles on either side of the lumbar region. The x-ray plate showed a compression and a crushing of

the second lumbar vertebra, and this would satisfactorily account for all pain and difficulty that he had. In this case, also, there was probably the added disability which came from injuring an old back which was probably becoming deficient by reason of gradual static difficulty as a result of his years of work.

CASE OF E. J. C. Age, twenty-seven. Married, with three children. Accident, July 11, 1914. This man fell about six or seven feet striking his right side on a girder. He was treated at the Boston City Relief Station, and their examination showed a breaking of the tenth and eleventh ribs, multiple abrasions of the right arm and rupture of the right kidney. He was in the relief hospital three days, and in the City Hospital three days. The injury in this case was aggravated by the fact that the man was told of the rupture of his kidney. The urine in the case cleared up in a few days, and there had been no symptoms referable to the kidneys, but the man was suffering from a marked fear that the kidney would rupture again if he started to work. To remove this idea from his mind an examination was made which showed myositis of the right lumbar muscles, which was accompanied, on motion, by muscle spasm and localized pain. This is the type of case which needs judicious encouragement. This man needed work to loosen up the back muscles, and he also needed work to prove to him that there would be no resulting danger to the kidney. In other words, the best therapeutic agent in this case for his moral and physical condition was employment.

CASE OF A. B. This man, an Italian baker, received an injury by reason of having his hand caught in a machine. As a result of this accident he injured the metacarpal bone of the right hand, with an inflammation of the tendon sheaths over it.

When the period of acute inflammation was over, and it was necessary to start using the hand in order to insure its future usefulness, this man's employer, a woman engaged in the baking business, appeared at the office of the Board with the employee, and she was told the kind of work that would be useful to the man in making a recovery. The woman took it upon herself to see that such work was given, and the man at once passed from a totally incapacitated class to the class, where, in addition to what he could earn, partial compensation also was paid.

One point which stands out forcibly as a result of experience in making examinations is the fact that oftentimes a long period of disability may be prevented if a little direct personal interest is taken in the cases of incapacitated employees by employers or surgeons. By way of digression it might be well to state here that the writer has found very little conscious fraud attempted by injured employees. There is not the incentive for a wage earner to remain from employment in the hope of getting large sums of money that existed in times past. Again, the temptation to prolong litigation extending over a long period, as is seen in ordinary tort cases, does not appear to any great extent under the act because of the fact that those who can afford to lay off are not those engaged in the industries insured. Reverting to the subject of returning employees to industry, and follow-

ing out the suggestion of establishing a more personal relationship, it appears that there is needed definite follow-up treatment in accident cases after they leave hospitals. It is all right to give advice to an injured man, but for his good and for the good of the community it would be much better if the proper treatment were given. To my mind one of the most important forms of treatment is massage, when given under proper conditions.

While acting in the capacity of impartial physician it was most interesting, if somewhat arduous, to make as complete a study of each case as time and the conditions under which the examination was made permitted.

In conclusion, the fact should be mentioned that the manner in which the Industrial Accident Board has applied the opinions given to the final determination of the cases referred for examination has been most gratifying.

AN OUTLINE FOR THE MANAGEMENT OF CARDIAC CASES FROM THE OUTPATIENT DEPARTMENT STANDPOINT.

By MARK H. WENTWORTH, M.D., CONCORD, MASS.

In taking up a case of cardiac disease the first questions of interest are the present health of the members of the family, the deaths with their causes, and whether there has been any rheumatic fever or cardiac disease in any of the direct branches of the family.

The greater part of the lives of our patients is spent in their homes, and therefore it is of the greatest importance that we know the home conditions, the location, possibilities of getting good air, freedom from noise, the number of occupants per room, the plumbing, the possibilities of rest and the chance for recreation—whether the child can have a quiet place in which to play, or if it must go into the street for diversion. Perhaps the most important question of all is that of discipline, and are the family able and willing to cooperate.

Without proper opportunities for rest, recreation, and discipline, we can scarcely look for a speedy or permanent improvement.

In obtaining the *past history* of a child, we should learn about its general health, the infections which the child has had, with special reference to their sequence and their relation in time to the rheumatic infection.

The infectious diseases which may have a causal relation are measles, diphtheria, pertussis, scarlet fever and smallpox, but chorea, tuberculosis and influenza, colds and coughs, and adenoids must be considered, and more especially pharyngitis and tonsillitis.

In taking up chorea I must digress a moment,

as its causes and sequelae are yet under discussion. Osler states that "it has a remarkable liability to acute endocarditis." A causal relation between chorea and rheumatism has been claimed by many. Endocarditis has been claimed by some writers to be the cause of chorea. Kirkes and others state that endocarditis is by far the most frequent lesion in chorea, but their exact relationship is as yet undetermined. The endocarditis of chorea is invariably of the simple form and in itself is not dangerous, but it is apt to lead to the sclerotic changes in the valve which produce incompetency.

The digestive capacity, diet and regularity of the bowels all have their weight in the outcome to be expected.

Under the heading *Predisposing Factors*, we must take a broad view of the general health and of the previous condition of the child; the family history has its bearing or may be presumed to have from the number of cases which give definite evidence of rheumatic or cardiac affection in their history. The social history has an important place also. Dampness, unhygienic surroundings, close contact with others of the family who may have throat or tonsillar affections all having their direct or indirect influence. By far the most important, however, is the past history, often showing a trail of diseases undermining the health of the child, and finally an attack of rheumatism—probably the most important predisposing factor of all.

In making the physical examination it is necessary not only to make a complete examination, but the general condition, as affected by the cardiac involvement, is studied with a careful view to laying out the proper care for each individual case in the home. Locally a study is made of the enlargement of the heart, regularity and force of the beat, location and quality of the heart sounds and murmurs, the quality of the pulse and estimate of the cardiac capacity. The accuracy of this latter point would be greatly increased by the use of a sphygmomanometer.

Drugs. The most important drug in the treatment of cardiac affections is digitalis. Fraenkel, Schwartz and Cloetta have shown that, in therapeutic doses, digitalis has no effect upon the normal heart either in affecting the strength of the beat or in causing hypertrophy; neither has it any effect upon perfectly compensated undilated hearts with a valvular lesion. Its chief effects are seen in dilated hearts whose myocardium still retains some reserve power. In the severest forms of cardiosclerosis and fatty degeneration it may stimulate the fibres to the limit of their powers and thus do actual harm. In giving digitalis it is important to get a definite effect and yet not push the drug beyond the first stage of its activity, i.e. slowing of the pulse and increasing its size and to avoid the onset of the second stage, i.e. arrhythmia.

As hearts vary in their susceptibility to digitalis, and since it begins to act only after 24 hours and may have a cumulative effect, the

amount and frequency of the dose is not a simple problem. Its effect must always be carefully watched and if the rhythm becomes more irregular, it must be discontinued. When any disturbance of the conductivity occurs it is positively contraindicated. It is useful, first, in cases with broken compensation; second, in cases where acute dilatation persists in spite of rest; third, in persistent tachycardia which does not yield to other treatment. It is contraindicated in cases of heart block and in cases where the heart muscle has been diminished by myocardial changes.

Strychnia. There are some cases which show some signs of circulatory weakening and yet which do not seem to require digitalis. In these cases strychnia and camphor are used with good results. Strychnia is particularly valuable in cases of disturbed respiration following extreme heart failure, as in Cheyne-Stokes breathing and cardiac asthma. In such cases it should be used whether digitalis is being used or not. Camphor, like strychnia, is a vasomotor stimulant. Its most important use is in shock. (Best used as camphorated oil in 20 to 45 minim doses.)

Caffeine, like digitalis, acts upon the cardiac muscle, and raises the blood pressure by constriction of the peripheral blood vessels, and is, therefore, particularly valuable in conditions of shock and collapse. In this regard it is more valuable than camphor or strychnia, but unfortunately its use is often accompanied by palpitation, sleeplessness and even nausea, vomiting and delirium, which occur particularly easily in cases of heart disease.

Aconite in therapeutic doses slows the heart by stimulation of the vagus, but has little effect on the heart muscle. It is, therefore of value in fevers where the heart muscle itself needs no stimulation, but the heart needs slowing. It is of value in many cases of tachycardia, especially those of nervous origin.

The nitrites are ideal in many cases to relieve the work of the heart over short periods where the blood pressure is not already too low to admit of their use. Nitroglycerine must be used with the utmost caution, as individual susceptibilities vary greatly. Loeb reports a case of collapse after a dose of a hundredth of a grain, whereas Stewart has reported giving 20 grains a day to a single patient.

The home regulation of a case is the most difficult to manage, but much may be done if the home facilities are not impossible and the family are willing to coöperate. A room can usually be obtained where the child may be left in comparative quiet and lie down for periods of rest both morning and afternoon, the length of time depending upon the cardiac condition and the degree of patience which the child has for keeping quiet under these circumstances. In cases of broken compensation the only place for them is bed, and bed 24 hours out of the 24. When compensation has been established it is wiser to give the patient a few simple resisted movements

a few minutes a day or several times a day for a few days than to run the risk of their getting up, for I have found that if you once let them get up it is hard to keep them from overdoing it at first and a great hardship to have to go to bed again. Each case must be regulated to its own ability to do work, i.e. to be about. The first work to be taken up beyond the resistance exercises is walking. This must be very short at first until the power of the individual is learned; then the amount is gradually increased. The trouble with treating these cases which have to go to bed is that we cannot see them personally and so are unable to judge of their actual condition. Some others are so severe that they require hospital treatment, and are referred directly to them. Some others of less severity, but requiring indefinite bed care I have been able to visit myself or have seen through the kindness of the Social Service Department. These were cases which I did not care to have directed to go to bed for a week and come in to report at the Dispensary in ten days or so.

The Diet in the severer cases, where bed treatment is required is all-important. An increase in blood pressure becomes manifest within a few minutes after the ingestion of a meal, reaches its maximum within one or two hours and declines more slowly. This pulse rate is always distinctly increased by eating. Therefore the diet should be light, just enough to keep up nourishment, without ever causing a sense of fullness or of allowing gas to form. Gas in the stomach pushes up the diaphragm and embarrasses the action of the heart, causing decreased systolic output and an increased rate. The lacto-cereal diet is the best. This is made up of milk, eggs, custards, junket, crackers, zweiback, and toast. Most of the prepared cereal foods are good, since they give much nourishment with small bulk and are easily digested. Meat should be given sparingly, if at all, because the purin bodies tend to raise the blood pressure and the fibres are relatively slow of digestion.

In cases of edema liquids should be limited to three pints a day. Salt should be withheld as much as possible, as it is a contributing factor in the production of edema.

An excellent diet for heart cases of a severe form (Widal and Pavel, Strauss and Richter) which can be modified to suit the individual case, is as follows:

8 A.M. cereal, soft egg, toast, coffee, 6 oz.
10 A.M. milk, 6 oz.; soft egg, crackers.
Noon soup, chicken, potatoes.
4 P.M. milk, 6 oz.
6 P.M. milk, 6 oz.; soft egg, crackers, prunes.
9 P.M. milk, 6 oz.; bread.

In the less severe cases it is well to have the patient lie down for at least 15 minutes after each meal and for a full hour morning and evening. In order to be sure that this is carried out a definite hour should be selected, say from 11 to 12 and from 2 to 3, and have the one responsible for the child bring a list of the food, with

the amount eaten, as well as the actual hours in bed.

As to recreation, the child, if possible, should be kept off the street, even in the milder forms. Comparatively quiet yards or porches out of doors are often obtainable, and there the child may be amused with blocks or cards or toys; the older children playing house or some other non-exciting game.

In order to keep track of the more severe cases it is necessary that they be visited by the district physician, when available, or through the office of the Social Service Department. The physician-in-charge cannot be expected to see more than a small proportion of the cases given over to home treatment. At these visits the following points should be noted:

General condition.

How it stands in relation to condition at the last visit.

Cardiac condition.

How vigorously the treatment has been carried out.

How much the child has responded to it and whether it is more or less than was expected.

Whether it is wise to continue treatment or, if not, what changes should be made.

Prognosis. What is to be expected of each case should be pretty fully discussed at the first visit, modifying this prognosis perhaps in minor details at the second visit. It is in this way only that we can expect to get clear insights into the cases and to estimate properly the probabilities of success from the treatment.

NOTES OF A CONFERENCE ON THE MEDICAL AND SOCIAL ASPECTS OF SYPHILIS OF THE NERVOUS SYSTEM.

HELD AT THE PSYCHOPATHIC HOSPITAL,
MAY 27, 1915.

(Series concluded from page 53.)

THE DEVELOPMENT OF THE GOLD SOL "PARETIC" REACTION AS COMPARED WITH THE "CEREBROSPINAL SYPHILITIC" TYPE, CONSIDERED FROM THE TIME NECESSARY TO FORM A COMPLETED REACTION.

By H. C. SOLOMON, M.D., AND E. S. WELLES, BOSTON,

What the significance of our findings may finally prove, we cannot say. The comparison of left and right shows differences looking in the same direction in the complication of pattern of frontal and temporal regions, and differences looking in the opposite direction in the superior parietal region.

COMPLICATION

<i>frontal</i>	L < R in general; L < R in paresis
<i>superior parietal</i>	L > R " L < R "
<i>inferior parietal</i>	L = R " L > R "
<i>temporal</i>	L > R " L > R "
<i>occipital</i>	L < R " L = R "

In point of fact, the differences are slight in some instances so that the table may be arbitrarily simplified as follows:

<i>frontal</i>	L < R in general; L = R in paresis
<i>superior parietal</i>	L > R " L < R "
<i>inferior parietal</i>	L = R " L > R "
<i>temporal</i>	L > R " L > R "
<i>occipital</i>	L = R " L = R "

Accordingly the paretic right frontal pattern is simpler than the general right frontal pattern, judging by its left-sided fellow; but its variation is in the same direction and may, perhaps, safely be neglected. The temporal differences, looking in the same direction, and the virtual equivalence of the occipital patterns, leave us with parietal differences alone. The superior parietal observations indicate more differences than the inferior.

If the pattern of the left superior parietal region, viewed through a window of given size, is to be represented by an index 14.3 for cases in general, we find that the right superior parietal window yields for the paretic the index 15.3. Both right and left superior parietal regions in the paretic seem to be absolutely more complex than the same regions in the average brain.

In some such direction must we look for internal characters of the body at the basis of human tendencies if we are ever to be aided by anatomy. It is perhaps too easy to speculate that, on the basis of these brain findings, the paretic is more impressive, less controllable, than the average man. Yet the speculation is not inconsistent with a number of facts and collides with none perhaps.

COMPARATIVE COUNTS OF SULCI IN TEN CORTEX REGIONS OF PARETIC BRAINS AND BRAINS IN GENERAL.

	Grand Average	Male Average	Female Average	Paretic Average	Male Paretic Average	Female Paretic Average
Left frontal	14.6	14.3	15.2	14.7	14.8	14.4
Right frontal	15.0	14.6	15.1	14.8	14.8	13.8
Lt. superior parietal	14.3	14.7	14.8	14.7	14.6	14.8
Rt. superior parietal	14.0	14.1	13.7	15.3	14.1	14.2
Lt. inferior parietal	14.1	13.7	13.8	14.0	14.1	13.8
Rt. inferior parietal	14.1	13.7	14.3	13.7	13.7	13.7
Left temporal	11.6	12.4	12.3	11.4	11.6	11.1
Right temporal	11.3	12.2	12.0	10.9	11.1	10.1
Left occipital	18.4	17.1	17.5	18.2	18.3	17.6
Right occipital	18.5	17.5	18.0	18.2	18.3	18.1

PSYCHOLOGICAL WORK.

V. V. Anderson in 1913³ considered a group of 184 specially tested Psychopathic Hospital cases, pointing out in a general way the greater disadvantage entailed by poor auditory imagery, as compared with poor visual imagery. It seemed that there were more syphilitics amongst the poor "audiles" than amongst the poor visualizers.

A more extensive piece of work than that by Anderson has since been done at the Psychopathic Hospital by Mr. Bazeley and Miss H. M. Anderson. Bazeley and Anderson find speech defects to be a rather common property of our congenital syphilitic cases and difficulties with vision to be slightly more common than defects of hearing. Disorders in the receptor apparatus (including apperception, elementary associative power, range of observation and discrimination) are rather more frequent in the congenital syphilitics than in other disorders, although disorders in the field of emotions and the will stand very close to the receptor disorders. When Bazeley and Anderson came to compare the syphilitic cases with non-syphilitic cases on the other hand, they found that disorders on the side of the emotions and will to run far in the lead of other psychic symptoms. Of course there is something of an artefact about this comparison, since about half of the non-syphilitic patients brought to the Psychopathic Hospital for examination are brought on the score of some delinquency or social inadequacy, and the tale of disorders in the field of emotions and will is naturally swollen, from the fact that the scope of the Psychopathic Hospital work has so much to do with delinquency and potential delinquency. The effect which syphilis has upon the nervous system appears to be a very general one. It is important from every standpoint to consider that, as Bazeley and Anderson seem to demonstrate, trouble with the senses and with the elementary working up of sensations is so much more frequent a phenomenon than it is in non-syphilitic cases. No decision has yet been rendered as to the point of Dr. V. V. Anderson concerning the greater proportion of syphilitics among the poor "audiles" than amongst the poor visualizers.

Work on the Chemical and Cytological Side (H. C. Solomon, H. O. Koefod, E. S. Welles): The Psychopathic Hospital laboratory has continued work intensively on the gold sol reaction and has studied the cytological situation in the cerebrospinal fluid with an endeavor to correlate the gold sol and cell results. The work of the laboratory has been backed effectively by the pathological service of the State Board of Insanity. The extensive service (over 150 autopsies in the year) of the pathological department of the State Board of Insanity has permitted the working out of clinical laboratory ideas in a very brief compass of time.

The evolution of the work of Solomon and his associates has been an interesting one. Proceed-

ing from a routine application of the Lange gold sol test,¹² whose value had come to be recognized in several of the laboratories in this country, Solomon proceeded to attack the problem in the cerebrospinal fluids of autopsied cases.¹⁷ It had been an unfortunate fact that in the nature of things the Wassermann reaction had proved entirely inapplicable to the fluids of autopsied cases. For this reason, confirmation by the pathological anatomist of the conclusions of the clinician had been in many instances delayed. It was the good fortune of the laboratory to discover that the Lange method was entirely applicable to fluid post mortem. Moreover, the surprising result was obtained that the reaction was found to differ in different parts of the cerebrospinal fluid system.¹⁸ Thus a chemical proof was obtained of differences in the qualities of different parts of the cerebrospinal fluid system, so that one could separate, on the grounds of colloidal chemistry, the fluid from the spinal part of the cerebrospinal fluid system from that of the cerebral ventricles and from that of the subpial fluid. Naturally also the subdural fluid was found to exhibit at times a different gold sol reaction from the other fluids just mentioned; but this latter fact might have been expected from the general anatomical belief that the subdural space is a closed space not in communication with the subpial space. No definitive proof appears ever to have been brought concerning the questions of communications between the ventricular fluid, the subpial fluid and the spinal fluid. Much has been said upon both sides, and Dr. Solomon has given a brief analysis of the two sides to this important question in a former paper.¹⁸

It must be remembered that the proof from colloidal chemistry as given by Lange's gold sol test is not entirely convincing, since this test is a test for *pathological* fluids. Accordingly we have not yet proved that the fluids in different loci of the cerebrospinal system have normally any important chemical differences. All we can at present say is that in pathological conditions, these loci are rather apt to show significant differences in the gold sol reaction. There appear to be coming in slowly a number of observations from the surgeon's table which indicate that the ventricular fluid and the subpial fluid may show differences in the Wassermann reaction. Taking these two points together, namely, the differences in the Wassermann reaction as demonstrated in life, and the gold sol reaction as demonstrated in autopsied cases, we must feel entitled to conclude that at any rate under pathological conditions, and possibly under normal conditions, there are important chemical differences in these loci. Again it was thought that these pathological differences in the different loci of the fluid might well have significance from the practical standpoint of treatment. It seems natural to conclude that varieties in the Wassermann reaction and in the gold sol reaction in different loci

of the nervous system should indicate differences in the spirochete content of these cases. If not differences in the spirochete content, then differences in the effects of spirochetes in the different loci may be suspected. Since the papers of the conference, of which this article is intended to be a summary, the gold sol work has demonstrated still more prettily the point just mentioned. A case autopsied by Dr. M. M. Canvan, Assistant Pathologist in the State Board of Insanity, has shown one sort of gold sol reaction on one side of the brain and another sort of reaction on the other side in a case of unilateral lesion (cyst of softening). This case will be reported on more especially in another connection.

Although this work has perhaps no important practical application at the present time, the Psychopathic Hospital workers were encouraged in the belief that a certain optimism is not only necessary, but logical, in the therapeutic situation which confronts us at the present time in the field of neurosyphilis. For it is clear that treatment which might serve to clear the *spinal locus* of the cerebrospinal fluid system might fail to clear the *ventricular locus* and that the *subpial locus* would perhaps be still more difficult to sweep clear of all morbid agencies and materials.

It was consequently with renewed vigor that the intensive treatment of cases of syphilis of the nervous system has been prosecuted and will be prosecuted in future. Another important fact seems to be that according to the conclusions of Solomon and his associates, it is practically, if not theoretically, impossible to distinguish by any available clinical or laboratory tests between so-called cerebrospinal syphilis and general paresis. Now in general we have long been taught to consider that cerebrospinal syphilis is somewhat amenable to treatment, and we are bound to express a certain optimism as to continued and intensive treatment of these "plain" cases of neurosyphilis. It is well known that most workers maintain that the situation is quite otherwise in general paresis, which is commonly regarded as practically inaccessible to treatment. But, if now we must put general paresis into quotation marks, and regard it as parenchymatous neurosyphilis and state that to the parenchymatous element there must be superadded in most cases a meningitic element, then what becomes of the distinction which leads us to say that "plain" neurosyphilis is amenable to treatment, but parietic neurosyphilis is not thus accessible? The logical outcome of this situation is, according to Solomon, that every case must be subjected to therapeutic test if we are to determine whether there are two groups of neurosyphilis cases, namely, *Group A, which does respond to treatment*; and *Group B, which does not respond to treatment*. If it seems worth while to regard cases which do not respond to treatment as cases of "paresis," then those who desire to use this term are welcome to its use.

Add to these considerations the fact that there certainly exists a condition which we have called *latent neurosyphilis*, in which all the available laboratory signs are positive, and in which no mental symptoms have as yet occurred, and it will be seen that conditions are still more optimistic as regards treatment. If, in short, before mental symptoms appear in cerebrospinal syphilis, there may exist for months or years a full-blown chronic meningitis, with a full complement of albumin, and excess of globulin, combined with a positive Wassermann reaction in both serum and spinal fluid, and positive gold sol reaction in the spinal fluid, then we must certainly regard such cases as very important ones to treat. To be sure, that which strikes very deeply into the parenchyma must be entitled, in the present phase of science, to be regarded as incurable. How far the symptoms of general paresis and neurosyphilis in general may be regarded as "functional" and as irritative rather than paralytic (to use Hughlings Jackson's distinction) must remain a question. We are under the impression that some of the most socially difficult cases are the most amenable to treatment, whereas some of the most grandiose and morbidly happy cases are precisely those in which the treatment is less effective. Perhaps the point lodges in this, that in these latter "quietistic" cases, the lesion has struck deeply into the parenchyma, whereas in the "anti-environmental" group of cases the symptoms are largely irritative and indicate much less destruction of tissue. The probabilities are that in practical hospital treatment of paresis, the most difficult cases, from the standpoint of the *ménage*, have not been the cases elected for treatment, but that much time has been expended upon the incoherent and demented group on the one hand, and the happy and grandiose on the other.

Enough has been said to indicate the grounds for optimism in the present situation.

SUMMARY.

The writer has endeavored in these notes to present the neurosyphilis situation as it faces us locally and has not endeavored to sum up the neurosyphilis situation in general. Still it is clear that amongst the ten papers of the present series will be found briefly mentioned most of the aspects of the neurosyphilis problem which are appealing to the world at the present time. The humanity of Dr. Post's remarks in Article I needs no comment. Especially wise is his note that "*when a social worker comes into the family of the syphilitic, she must dismiss from her mind any pre-supposed guilt.*" It is also important to take seriously Dr. Post's point that when all the laboratory signs of syphilis of the nervous system are present and no clinical features of neurosyphilis are outstanding, there must be a serious question whether the clinical work is being done effectively. We need very intensive

clinical work in the field of neurosyphilis at the present time. We cannot get on with the kind of loose work which prevails, it is to be feared, in certain fields of private practice and in certain institutions.

The eagerness with which social workers are beginning to take up the problem of the examination and prophylaxis for syphilitic patients and their families, and the entirely scientific manner of the approach of these social workers to their problem, are to be seen clearly in the communication of Miss Wright (Article II) and of Miss Jarrett (Article III), as well as in the spirit of Dr. Gregg's article (IV) on "Some Economic Facts of the Problem." How concrete the social worker's confrontation of the problem is can be seen from the appendices to Miss Wright's article (Article II), embodying the blank forms which are used in the syphilis family investigation. The syphilis of railroad men and even of a lighthouse man, of caterers, cooks and nursemaids, mentioned by Dr. Gregg, is a mention of nothing new to the community; yet we cannot be too insistent upon the familiarity of such information. These facts should stand out prominently in our propaganda.

Article V by Bazeley and H. M. Anderson, upon the mental features of the congenital cases, is a mere beginning of work in this direction. How much of our truancy and juvenile court problem is due to congenital syphilis cannot yet be safely estimated, but whatever the true percentage of the luetic fraction among these antisyphilitic cases, the absolute numbers are sizable enough to warrant attention. The impairment of the sense organs and the elementary psychic apparatus, brought out in this article as characteristic of congenital syphilis, is of some general importance.

There follow articles (VI, VII, VIII and IX) upon the diagnostic situation in neurosyphilis. Article VI by Solomon and his associates is a continuation of his previous work, and not only emphasizes the fact that the gold sol examination is essential in cerebrospinal fluid examinations, but also that it is at present impossible to tell the parietic from the non-parietic form of neurosyphilis. Upon this fact is based the important conclusion above mentioned in the ninth section of these notes.

Article VII shows that the cell count in the cerebrospinal fluid is not an index to the quality or degree of irritative and paralytic changes shown in the symptoms of cases of neurosyphilis.

Article VIII brings up a rather large question,—whether the laboratory signs of neurosyphilis, and in particular, signs of extensive chronic inflammation of the nerve system, appear before the occurrence of any characteristic mental symptoms. We have been fortunate to discover a certain number of these cases which, of course, will often elude observation because, having no mental symptoms or other symptoms of importance, such cases would not naturally be

subject to intensive examination. An extension of family work in syphilis, and especially neurosyphilis, may uncover a great many more of these cases that we have termed "latent" neurosyphilis, or somewhat fantastically, *General Paresis sine Paresi*. Do these findings indicate certain unsuspected conditions in the genesis of neurosyphilis? It is too early to make such a claim. It is certain that after all, such cases deserve immediate and intensive treatment.

Article IX makes a special point concerning the gold sol reaction, namely, the point that the cerebrospinal syphilitic gold sol reaction is in some sense a *forme fruste* of the characteristic parietic reaction. Should this point be maintained, the essential unity of the two conditions would be still further established. The true explanation of the *forme fruste* here described must probably await developments in colloidal chemistry.

Article X, of which the present paragraph forms a part, endeavors to give a brief account of the special aspects of the neurosyphilis situation which have attracted attention at the Psychopathic Hospital.

REFERENCES.

- ¹ State Board of Insanity Annual Report, 1910.
- ² Annual Reports of the Psychopathic Department of Boston State Hospital, obtainable as reprints apart from the Boston State Hospital's annual reports, 1912, 1913, 1914.
- ³ Psychopathic Hospital Contribution No. 1913.6, "On Certain Irregularities in Mental Defect, Demonstrable by Mental Tests and Suggesting Special Educative Measures," V. V. Anderson, Boston Medical and Surgical Journal, September 18, 1913.
- ⁴ Psychopathic Hospital Contribution No. 1913.8, "The Incidence of Syphilis (Wassermann Reaction) in 111 Consecutive Out-Patient Children and Adolescents," W. P. Lucas, Boston Medical and Surgical Journal, September 18, 1913.
- ⁵ Psychopathic Hospital Contribution No. 1913.13, "Program with the Treatment of Paresis by Salvarsanized Serum," A. Meyerson, Boston Medical and Surgical Journal, September 18, 1913.
- ⁶ Psychopathic Hospital Contribution No. 1913.17, "Note on Some Problems of the Adolescent as Seen in the Psychopathic Out-Patient Department, Boston, Massachusetts," W. P. Lucas, Boston Medical and Surgical Journal, November 27, 1913.
- ⁷ State Board of Insanity Contribution No. 1913.2, "The Wassermann Reaction in its Application to Medicine," W. P. Lucas, Boston Medical and Surgical Journal, July 24, 1913.
- ⁸ Psychopathic Hospital Contribution No. 1914.1, "The Albumen Content of the Spinal Fluid in its Relation to Disease Syndromes," A. Meyerson, Journal of Nervous and Mental Diseases, Vol. 41, No. 3, March, 1914.
- ⁹ Psychopathic Hospital Contribution No. 1914.6, "Results of the Swift-Ellis Intrathecal Method of Treatment in General Paresis," A. Meyerson, Boston Medical and Surgical Journal, May 2, 1914.
- ¹⁰ Psychopathic Hospital Contribution No. 1915.14, "Analysis of Recoveries at the Psychopathic Hospital, Boston: I, One Hundred Cases, 1912-1913, Considered Especially from the Standpoint of Nursing," E. E. Southard, Boston Med. and Surg. Jour., Sept. 24, 1914.
- ¹¹ Psychopathic Hospital Contribution No. 1914.22, "Genetic Factors in 100 Cases of Perchanceosis," Donald Gregg, Boston Med. and Surg. Jour., Dec. 3, 1914.
- ¹² Psychopathic Hospital Contribution No. 1914.25, "Experience with the Lange Colloidal Gold Test in 135 Cerebrospinal Fluids," H. C. Solomon and H. O. Koeford, Boston Med. and Surg. Jour., Dec. 10, 1914.
- ¹³ Psychopathic Hospital Contribution No. 1914.28, "On the Systematic Control of Salvarsan Therapy Based on the Rapidity of Arsenic Excretion," H. M. Adler.
- ¹⁴ Psychopathic Hospital Contribution No. 1915.4, "Somatic Characteristics of General Paresis," Donald Gregg, Boston Med. and Surg. Jour., April 8, 1915.
- ¹⁵ State Board of Insanity Contribution No. 1915.3, "A Histological Study of the Optic Nerves in a Random Series of Insane Hospital Cases," H. M. Canavan, to appear in Jour. Nervous and Mental Disease, November, 1915.
- ¹⁶ State Board of Insanity Contribution No. 1915.4, "A Comparison of the Mental Symptoms Found in Cases of General Paresis with and without Coarse Brain Atrophy," E. E. Southard, submitted to Jour. Nervous and Mental Disease.
- ¹⁷ State Board of Insanity Contribution No. 1915.5, "On the Value of the Gold Sol Test (Lange) with Spinal Fluids Obtained Post-mortem," H. C. Solomon and E. S. Welles, Boston Med. and Surg. Jour., March 18, 1915.
- ¹⁸ State Board of Insanity Contribution No. 1915.6, "Varieties of the Gold Sol Test (Lange) in Several Loci of the Cerebrospinal

Fluid System: A Study of Twenty-eight Autopsied Cases." H. C. Solomon and E. S. Welles, *Boston Med. and Surg. Jour.*, April 29, 1915.

¹² Psychopathic Hospital Contribution No. 1913.34, "On Institutional Requirements for Acute Alcoholic Mental Disease in the Metropolitan District of Massachusetts in the Light of Experiences at the Psychopathic Hospital." E. E. Southard, *Boston Med. and Surg. Jour.*, Dec. 25, 1913.

¹³ Statistical Notes on a Series of 6000 Wassermann Tests for Syphilis Performed in the Harvard Neuropathological Testing Laboratory, 1913." E. E. Southard, *Boston Med. and Surg. Jour.*, June 18, 1914.

¹⁴ Psychopathic Hospital Contribution No. 1912.7, "Statistical Notes on the Need of Social Service in the Psychopathic Out-Patient Department." Mary C. Jarrett, *Boston Med. and Surg. Jour.*, Sept. 18, 1913.

¹⁵ Psychopathic Hospital Contribution No. 1912.35, "Notes on After-Care and Moral Suasion Work with Alcoholics in the Out-Patient Department of the Psychopathic Hospital." A. Warren Stearns, *Boston Med. and Surg. Jour.*, Dec. 25, 1913.

¹⁶ Psychopathic Hospital Contribution No. 1914.5, "The Function of the Social Service of the Psychopathic Hospital, Boston." Mary C. Jarrett, *Boston Med. and Surg. Jour.*, June 25, 1914.

¹⁷ Psychopathic Hospital Contribution No. 1914.20, "Further Notes on the Economic Side of Psychopathic Social Service." Mary C. Jarrett, *Boston Med. and Surg. Jour.*, Dec. 2, 1914.

¹⁸ Psychopathic Hospital Contribution No. 1915.3, "The Carnivorous and Herbivorous Types in Man: The Possibility and Utility of their Recognition." John Bryant, *Boston Med. and Surg. Jour.*, March 4, 1915.

(Conclusion of Series.)

Clinical Department.

A NON-FATAL FRACTURE OF THE AXIS.

By FREDERICK W. O'BRIEN, M.D., BOSTON.

Fracture of the axis in itself is not often recognized in the living; so that a non-fatal case

of unquestioned fracture of the second cervical vertebra is, I believe, worthy of report. Mixter and Osgood in their review of the literature on "Traumatic Lesions of the Atlas and Axis" (q.v. *Amer. Jour. Orthopedics*, February, 1910.) call attention to the unusual amount of room allowed the spinal cord in this region, which may very well account for the lack of cord symptoms in the case at hand. The mortality, however, in injuries to the axis seems to bear a direct relation to the involvement or lack of involvement of the odontoid process. It is noteworthy that in six of the eight fatal cases recorded by Corner (*Annals of Surgery*, 1907), the odontoid process was broken, while in ten non-fatal cases fracture of the odontoid occurred but once.

The patient, a male child, aged seven years, was admitted to the Brockton Hospital August 26, 1915, giving a history of having fallen from a tree five days before and striking the ground on his back. He complained of inability to move his head without pain, and indeed it was notable how he had already adapted himself to his new condition for he supported his lower jaw along the ramus with his upturned hand. In this way he was able to turn his head about with some comfort and much less limitation of motion.

There was absolutely nothing remarkable about the child except his carriage. The pupils were equal and reacted normally to light and distance. No reflexes were disturbed. There was no paralysis of any muscle or group of muscles. Sensation was un-



impaired. Pressure over the second and third cervical vertebrae was painful.

Röntgen examination disclosed a complete fracture of the laminae of the axis (see Fig.). An orthopedic support was applied by Dr. G. A. Moore. This was cut down after five weeks, at which time the writer made a second röntgen examination which revealed a union so excellent that one would feel inclined to doubt that there had ever been any solution of continuity. The child now is about playing quite as though nothing had happened.

New Instruments.

THE VACUUM FLUSHING LEECH.

BY HERBERT SPENCER WHITE, M.D., ORWELL, ONTARIO.

THE name of this instrument is suggestive of its construction and one can readily appreciate its value, when once demonstrated, in aiding, in the treatment of special localities, and of the ultimate elimination of the infecting organism and repair of the parts.

This apparatus demonstrates the application of a very simple law of nature and how it can be used with success in the treatment of diseased tissues of the human body, where the process of extraction or drainage of toxic sera, and of inflammatory exudates and of germs themselves, is desired; where other objects in the treatment are to increase the vitality of the part; to soothe the part; and to use our most powerful germ destroying agents in as concentrated a form as possible, without injuring in any way but in aiding the effort nature is putting forward to clean up the diseased tissues.

For this purpose I have devised for the treatment of special localities, special leeches, or vacuum cleaners.

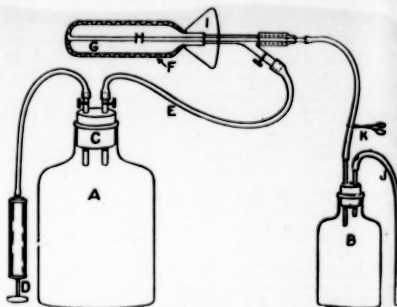
1. A vaginal leech for the treatment of vaginitis and to aid in the depletion of pelvic inflammatory conditions.

2. An intra-uterine leech for the treatment of the endometrium, the metrium and the uterine appendages.

3. A male urethral leech, to treat urethritis, either acute or chronic.

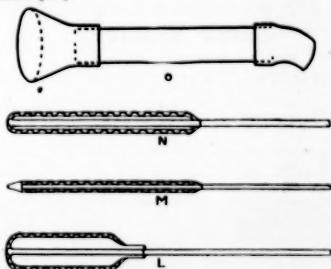
Our most powerful germ destroying agents are in the form of liquids, vapors and gases. Liquids are used generally as simple antiseptic cleansing solutions; some are very powerful corrosives and must be used with great care. Vapors and gases are used principally by boards of health and hospitals to disinfect the sick room. The objects of disinfecting are to destroy the germs of disease and to make the dust on the floors and walls as sterile as possible. To accomplish this an oxidizing or corrosive agent must be used, and to be effective, must be employed in the presence of moisture.

My vacuum flushing leech is devised to ac-



DRAWING REPRESENTING THE VAGINAL LEECH FULLY CONNECTED.

- A. Vacuum chamber.
- B. Vessel to hold any vapor, gas or solution.
- C. Perforated rubber cork.
- E. Tube connecting vacuum chamber with leech (H, I, F, G) and B.
- J. Tube to carry off excess of gas and vapors when they are used.
- K. Clamp to pulsate the leech and, when open, permits the contents of B to pass to the leech.
- D. Exhaust pump.



- O and N represent the intra-uterine leech.
- O. A very light tube large enough to admit N freely; the funnel at the end is of rubber, and fits over the cervix.
- N. The intra-uterine tip is made of flexible material, and porous to the extent of ten thousand openings to the square inch.
- M. Male urethral leech.
- L. Vaginal leech.

complish the above services for certain localities of the human body and it accomplishes this feat more or less completely. Any liquid vapor or gas may be made to come in contact with the surface under treatment. Vapors and gases have, heretofore, never been employed to fumigate or disinfect the cavities of the human body. With the aid of my leeches they can be used with perfect safety and yet with a thoroughness that is seldom accomplished at any outside fumigation; while at the same time the process of extraction and drainage is being carried on.

This is all accomplished in an air tight vacuum chamber and thus is not only free from the dangers of outside contamination but is absolutely aseptic and antiseptic, as is easily seen from the diagram of my vaginal leech.

When the leech is applied and as soon as sufficient exhaustion is reached,—any degree of exhaustion may be obtained up to fifteen pounds to the square inch, the atmospheric pressure,—ten thousand suckers to every square inch of surface are set to work. Now, since the average

sized leech covers about twelve square inches, there are 120,000 suckers at work all discharging into the vacuum space between the cylinder and the outside covering.

The inflammatory exudates and toxic sera, which are held in the tissues only because the atmospheric pressure is the same upon all sides of them, both inside the tissues and outside, will, as soon as the outside pressure is taken away, move in the direction of the least resistance, namely, toward the leech.

The instant any product of extraction reaches the surface of the leech it becomes powerless, and is at the mercy of our antiseptic and oxidizing agents and can be flushed away. Thus the leech may be maintained indefinitely in contact with the tissues and always in a state of antiseptia. It can be fumigated frequently without any inconvenience or suffering whatever, on the part of the patient.

If equilibrium is maintained in the tissues the infecting organisms will remain there and work and continue active until they are gradually forced out or destroyed by the vital forces of the body. Drained by nature, we say, and in reality the physiological forces of the body, fought away the infecting organism with the outside forces of nature as a handicap.

If they gradually work deeper and deeper into the tissues they meet a strong defensive barrier in the form of a pyogenic membrane and engage in conflict with the resisting forces of the body, with the result that an abscess is formed. The germ process may be vanquished and immunity established. My leeches are designed to avert or lessen the danger of the foregoing calamity.

So long as equilibrium is maintained, just so long will the forces of the body be taxed to their fullest capacity to ward off the attacking germs.

By the action of the vacuum leech the equilibrium is disturbed, the pressure outside the tissues is lessened, and the toxic substances are gradually forced from the invaded territory into the leech and, once there, are quickly dealt with by our antiseptic agents and flushed away to a sealed retainer. Now the tissues may be bathed with any soothing lotion. Reinforcements are constantly reaching the site of conflict through the hyperemia that is induced. Heat is made to contract the tissues *ad libitum* and the process of repair is rapidly carried on.

Unlike Bier's hyperemia, produced by cupping, there is no stasis of the blood stream, but a mild hyperemia is produced under forces fully as powerful as any Bier has suggested.

The treatment is carried on while the patient is in bed in a recumbent position, and, without any inconvenience whatever, no pain or disturbance of sleep. The use of the bed-pan is dispensed with and yet any quantity of bathing solution may be used, up to many gallons.

My intra-uterine leech is provided with a flexible tip which is easily made to conform to any

position; it is also made adjustable to any depth of uterine cavity. Being less than a half inch in diameter it can be used in the majority of infected uteri without any degree of dilatation.

My male urethral leech is a demonstration in contra-distinction to Bier's hyperemia treatment. The mucous lining of the male urethra being extremely sensitive and tender, is very prone to injury unless treated with extreme caution. The application of my leech is absolutely free from pain or discomfort of any kind while in action. The only pain experienced is in its introduction and withdrawal, which is readily overcome by the use of a mild solution of cocaine. Its application must be used at the discretion of the operator.

Some might infer that it is impossible to remove or abstract, mechanically, living germs from their associations with the tissues, while others are just as frank in their statement and belief that nothing within reason is impossible.

If germs can be removed mechanically they must be free in the lymph spaces and be able to travel with the lymph. Where the phagocytic cells of the blood are able to attack a germ there must be a space, however small. It is in this space that the germs, in their active state, are able to produce an effect upon the tissues, and it is from this space that they must be removed and are removed successfully by the activity of the white corpuscles. We have microscopical proof that the leucocytes do engulf and carry germs from the tissues. This act is just as truly mechanical in its science as would be the act of carrying a load from one room to another.

Again, one might say that it is impossible to act upon them by any outside force. The inside tissues, being in communication with the outside through the lymph spaces and scarified external surface, become acted upon the moment the atmospheric pressure outside is removed. The equilibrium inside the tissues by virtue of the expansive or volatile nature of the liquids and gases associated with them is also disturbed. In the endeavor to re-establish equilibrium again these forces must of necessity move towards the outside, the direction of least resistance. The germs which are occupying these lymph spaces must likewise of necessity, be forced to follow the lymph current.

Would it be possible to extract pus from a cavity within the tissues? This would be possible from the above argument, but the pus would, of necessity, have to diffuse through the tissue lymph spaces which would require a long continued disturbance of the equilibrium. It would not be possible if the pus were walled off by a pyogenic membrane unless it were possible to scarify or puncture this membrane,—if punctured from the outside the process of evacuation is made very simple.

Some are not sure but that pus is a beneficial agent in the repair of the tissues and ought not to be removed. It is true this was the accepted theory a few years ago, and surgeons were in

the habit of inoculating their wounds to assure a goodly supply of pus. If there is anyone who still maintains that pus is a good thing for the tissues, for him I have no argument, and will keep as far from him as possible.

My contentions are that the products of germ growth are gas, the same as any other end product in metabolism. This gas is immediately dissolved in the tissue plasma, producing the toxic sera. The inflammatory exudate quickly follows, and we have what is commonly called an infection. An inactive germ in the tissues would produce no symptoms and again if the products of germ metabolism could be removed immediately, there would be no symptoms. This would not interfere in any way with the phagocytic action of the white blood corpuscles and any germ that might be entangled in the connective tissues could easily be taken care of by them. The symptoms of disease, if any at all, would be greatly ameliorated.

Can a disturbance of the equilibrium which is maintained within the tissues be produced through the unbroken skin or mucous membrane? It can, with the result that stasis of the blood stream is produced which may or may not be of any value in the process of eliminating the infection.

Surfaces which are already discharging pus and toxic sera, as in vaginitis and urethritis and in infected uterus, are already in a state of scarification and in communication with the lymph spaces throughout the tissues.

Is it possible for a mechanical device to act similarly to a live leech? A comparison of my simple device with the action and construction of a live leech will amply illustrate that it is possible.

A live leech placed upon the skin immediately perforates the skin to communicate with the lymph spaces from which it extracts the serous fluids and conducts them to its own interior until further suction is impossible, owing to the filling of the leech, when it immediately drops off.

My artificial leech is furnished with ten thousand suckers to the square inch, all communicating with the lymph spaces in the tissues, providing the surfaces be scarified. It sucks from the tissues and when filled will drop off. But unlike a live leech, and a great advantage over the live leech, it may be repeatedly filled, flushed, and sterilized and maintain its hold on the tissues for an indefinite period, at the discretion of the operator.

Would it be justifiable to scarify a surface before applying an artificial leech? The answer to this is in the affirmative, since there is no danger of introducing infection through the leech.

Would microscopic petechiae result from application of an artificial leech? They would on unscarified surfaces if the application were long continued but not on scarified surfaces.

I have endeavored thus far to make my leeches

speak for themselves. Being my own invention, and a system that is absolutely new to the profession, I have refrained as much as possible from making any bravado statements.

If after reading the article one understands thoroughly the principle involved, the simplicity of the apparatus, its neatness,—no manipulation or fussing in its employment,—and then is skeptical as to its merits, I am afraid that any testimonial one might give would be of very little value. However, I have demonstrated the principle with instruments very crude compared with my present leeches, and obtained very gratifying results,—results that guarantee success for its future.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

By EDMUND W. CLAP, M.D., BOSTON.

THE HETEROPHORIA QUESTION.

WENDELL REBER¹ sums up interestingly the present status of the heterophoria question. The author believes that no case of heterophoria should be viewed from the muscular standpoint until the refraction has been dealt with thoroughly, and a proper correction worn for from one to two months at least. In 1000 cases 70% were relieved of their symptoms by refractive correction alone. But some individuals reveal insufficiency in their relative accommodation or relative convergence. Anatomical anomalies in the insertion or in the relative power of the muscles produce symptoms not relieved by correction of the refractive errors. The general health of the individual has a most important bearing on the development of symptoms from a heterophoria, as does also occupation. Heredity has some influence in strabismus, and the little that has been done indicates that there are family tendencies to heterophoria. If a patient presents two degrees of esophoria for infinity and anywhere from balance to two degrees exophoria for the reading distance he may be said to have euphoria and to have a pair of eyes well adapted to prolonged use either at infinity or at the reading distance, as far as his eye muscles are concerned. In esophoria not relieved by glasses correcting an associated hypermetropia, the author gives the usual prism exercises and also has found benefit in what he calls lateral rotation, viz: the patient looks straight ahead—then rolls the eyes as far as possible to the right, then back to the primary position and then as far as possible to the left and then back again. This may be done in cycles of four, as many times as can be comfortably borne. Failing exercises, perma-

nent prisms may be considered, and it is by no means true that the prism strength must be gradually increased or that tenotomy is finally reached. As a rule, esophorias with divergence insufficiency are the ones most likely to accept prisms gratefully. Fourteen per cent. of esophoria is in myopic patients; even here prisms are of value. In the author's series of about 500 esophorias he has tenotomized but one. It is not the degree of the esophoria which makes the patient require treatment, but the symptoms which it causes.

Exophoria may be (1) accommodative, when found with myopia; (2) with normal divergence and deficient convergence; (3) with normal convergence and excessive divergence; (4) with convergence and divergence both subnormal.

In 200 cases 75% gave good results under prism exercises, relieving symptoms, even when the degree of exophoria was not reduced. Permanent prisms are of value, especially if exercises are used for training the convergence. Of 500 exophorias studied, only 22 came to operation, preferably a tenotomy gauged by testing at the time of operation. Hyperphoria, differing from esophoria and exophoria, is very constant in its degree, even for years, perhaps because it is often due to abnormality in orbital build or to anomalous insertion of the tendons of the vertical muscles. It is more in evidence in the years from 30 to 50, and complicates presbyopia. Prism exercise has been a failure but rest prisms are of the greatest value, starting with a partial correction and giving enough to make the patient comfortable. The prism often gives permanent relief. The author had a favorable result in 297 out of 376 cases. Thirty cases were operated upon with 26 good results.

DELAYED HEALING AFTER CATARACT EXTRACTION.

Vail² discusses the causes of delayed healing of the wound after cataract extraction. The longest period he found was 49 days, during which the eye appeared the same as it did when the operation was just finished. The causes usually given are too large conjunctival flap, allowing aqueous to accumulate under it and stretching the sclero-corneal surfaces apart; shreds of capsule; tags of iris or vitreous; masses of lens matter; clots in the wound,—all may predispose to gaping wound and delayed healing. Sometimes, perhaps, relaxed tissues and failure to react may delay healing. Anterior detachment of the choroid may cause an empty anterior chamber, even when the wound is closed. Vail believes that the real cause is an involuntary spastic contraction of the obicularis palpebrarum muscle or a localized tic affecting this muscle which by its alternate contraction and relaxation presses the convexity of the cornea, thus flattening it to a certain extent and causing the aqueous to spurt through the wound in little gushes. Vail saw this occur in one of his cases. He then cut the obicularis ver-

tically at the outer canthus and the wound healed promptly. This was on the 26th day. The same good result followed two other operations, one on the 14th day and one on the 12th.

CATARACT EXTRACTION IN CAPSULE.

Knapp³ reports 100 successive extractions of cataract after subluxation with the capsule forceps. This modification of intracapsular extraction is done with a dilated pupil. A large section is made, with a conjunctival flap, and then an iridectomy. The capsule forceps (of Kalt) is introduced to a point below the center of the pupil and a large piece of capsule grasped. One should pull on the periphery of the capsule, trying not to tear it, and move the instrument up and down and side ways, to dislocate the lens in the capsule. The upper attachment is usually unruptured. Pressure straight back on the lower part of the cornea with Smith's hook causes the cataract to turn a somersault and come out lower edge first. After delivery if the upper edge still adheres, it may be separated by a stroking motion. If the lens does not turn, counter pressure may be needed at the scleral margin. If the capsule ruptures during expression it can generally be grasped and drawn out with the blunt capsule forceps. If a large piece tears out of the anterior capsule, the operation can be done as in ordinary extraction. This dislocation succeeds in from 40% to 50% of the cases, and secures the advantages of removing the cataract in the capsule without the risk of the Smith operation.

PLASMOMA OF LACRIMAL SAC.

Verhoeff and Derby⁴ report a case of plasmoma of the lacrimal sac, the same case having a flat yellowish growth of the conjunctiva of the left lower lid; the caruncle was enlarged and the semilunar fold thickened and also the conjunctiva of the upper tarsus. Pathological examination showed an enormous thickening of the wall of the sac composed largely of plasma cells and containing hyalin masses, some of which represented the remains of arteries and capillaries. It was found that the hyalin was derived chiefly, if not solely, from elastic tissue. Elastic tissue is formed around capillaries and small vessels which are normally without such coats. The conjunctival growth showed the same pathological conditions. This condition is not a pathological entity, but is an early stage of hyaline or amyloid degeneration of the conjunctiva; according to the preponderance of the cellular elements or of the degenerative material, the condition has been termed plasmoma or hyaline degeneration. Clinically the process begins with a painless enlargement of the lids, usually the upper, due to thickening of the conjunctiva, the surface of which is smooth and varies in color from a bright red to a pale yellowish gray or even like wax, according to the stage of the growth. It may bleed on manipulation or if ad-

vanced it may be avascular. Trachoma coexists in one-third of the cases. The process is often checked by excision. The writers believe that the origin of the condition is inflammatory, possibly due to slow absorption of toxin from the conjunctival sac. This is the first case in which this degeneration has been reported in the lacrimal sac.

RELIEF OF LACRIMAL OBSTRUCTION.

The subject of lacrimal obstruction has received much consideration and when probing has failed, and especially when there is a dilatation of the sac with retention of contents, extirpation of the sac has been much used. This removes the menace of foul secretion regurgitating into the eye, but it does not restore drainage of tears into the nose. Various intranasal operations have been devised for draining the sac, and that of West has many advocates. Clark⁵ believes this operation indicated in dacryocystitis, dacryoblennorrhea, in fistula and phlegmon, and in epiphora caused by stenosis in the nasal duct that cannot be cured by a few careful probeings. Epiphora caused by trouble at the puncta or in the lumen of the canaliculi or by lack of proper muscular tone in the orbicularis, which in turn prevent the lids from hugging the eyeball,—such conditions would not be relieved by this operation, the object of which is to cause the tears to pass directly into the nasal chamber, thus short-circuiting the duct. Pus, of course, drains from the sac. An opening is cut through the bone of the outer wall of the nose just over the torus lacrimalis, and the lower part of the lacrimal sac which lies in the fossa is cut off or punched out. West began this work in 1908 and improved the operation until in 1914 he reported a series of 200 operations with 90% of cures. The advantages of the operation are: Functionating tear apparatus, no external scar, no epiphora or necessity of removing lacrimal glands, and the operation may be done during an acute abscess. Infection of conjunctiva from the nose after the operation has not been reported.

TREATMENT OF TRACHOMA BY CO₂ SNOW.

Harston⁶ cures his cases in from three to six months, meaning by cure: (1) absence of discharge of any kind, (2) smooth palpebral conjunctiva and no hypertrophy in the conjunctiva of the fornices (3) reduction of pannus to a minimum. Of course gross deformities of the lids from the contracting conjunctiva are not cured. The author has treated 7000 cases as follows: The snow is moulded into a cylinder and sharpened to a point. Under cocaine the snow pencil is applied with firm pressure to the conjunctiva of the everted lids for 15 seconds the first time and for 30 seconds at subsequent treatments. After an interval the lids are replaced. After two minutes the patient can open the eyes. Excessive scarring has not occurred in the author's cases. The reaction goes down in

two weeks or less, and may then be repeated. This treatment induces chronic hyperemia of the conjunctiva like Biers' hyperemic treatment.

SCLEROSTOMY.

Verhoeff⁷ has examined an eye removed for a small intraocular sarcoma seven weeks after a successful sclerostomy done with the Verhoeff punch. A definite bleb had formed and the tension was normal. A delicate connective tissue originating in the tissue of the bleb and not in the sclera had partly filled the fistula. Irregular spaces in this tissue communicated directly with the spaces opening into the anterior chamber. Endothelium did not line these spaces. The scleral fistula showed recent proliferation at the edges and some fibrous tissue formation, making the lumen somewhat smaller than it was in the first place. The outer surface of the sclera beneath the bleb had proliferated also. Descemet's membrane ended .5 mm. from the edge of the fistula. The corneal endothelium did not extend into the fistula. The root of the iris, much thinned, adhered to the corneo-sclera. The bleb consisted of a connective tissue network resembling the unpigmented stroma of the iris. There were here few blood vessels and no infiltration with chronic inflammatory cells. Spaces occurred within the bleb filled with a scarcely visible connective tissue. Some of the large spaces extended up beneath the epithelium. The conjunctiva over the bleb was thinner than normal. The edematous tissue of the bleb passed gradually into the normal conjunctival tissue. The spaces in the bleb were due to distention by intraocular pressure. Holth supposed incarceration of iris tissue in the wound made for better filtration but "certainly it is not essential to successful results for the fistula to be lined by pigment epithelium." Verhoeff believes from this examination that the fluid escapes mostly by way of the surrounding tissue, and not at all through the epithelium of the bleb. The author also suggests that in cases where the tension remains low, where no bleb forms and the scleral fistula has apparently closed, that there is a slow rate of secretion, so that a very small outflow suffices to keep the pressure down, while in other cases, perhaps most cases of hemorrhagic glaucoma, the secretion rate is so high that the pressure remains up even with a very efficient filtration and a large bleb.

SQUIRREL PLAGUE CONJUNCTIVITIS.

Vail⁸ reports a case of conjunctivitis with ulcers which suggested Parinaud's disease. The pre-auricular gland was enlarged and tender. There were systemic symptoms with final recovery. The cause was the *Bacillus tularensis*,—the squirrel plague germ. Sattler⁹ reports a case with severe general symptoms. The eye showed edema of upper lid and swollen conjunctiva with infiltrated points which ruptured and became ulcers. Symptoms lasted five weeks. Inocula-

tion of guinea-pigs gave lesions like those of B. tularense, and smears showed numerous minute encapsulated coccoids and rods resembling B. tularense.

BLASTOMYCOSIS OF EYE LIDS.

Jackson¹⁰ calls attention to this condition, often overlooked or wrongly diagnosed. He reports two cases, the first seen by four competent ophthalmologists and the other by two, none of whom recognized the condition. When the lids are involved we see one or more ulcers somewhat resembling epithelioma, but the infiltrated margin is soft and contains minute abscesses throughout its whole extent, and also small abscesses are found in the floor of the ulcer among the granulation tissue. Epithelioma, syphilis and tuberculosis are to be excluded. The mould-like organism constantly found in the abscesses has not yet been classified. It may be a saccharomycete or a more developed plant, as oidium. Perhaps more than one species are concerned, as some cases last for years, involving the skin, while there are systemic cases usually going soon to a fatal termination. The local disease has a predilection for the lids and should be recognized before cicatricial changes distort the lids and expose the conjunctiva and cornea. The process is cured by large doses of potassium iodide, which is specific. Painting the ulcers with silver nitrate may favor the local healing.

STUDY OF BITEMPORAL HEMIANOPSIA.

The work of Clifford Walker¹¹ has added greatly to our knowledge of the field of vision, and his improvements in perimetry and ingenious inventions aid in diagnosis, and especially in prognosis after cerebral operations. His papers should be read at length, but some of his points may be quoted here. He says a field examination with only one size of disc is as incomplete as visual examination with one size of letter. The 5 mm. disc may be called the normal disc, and a series of nine discs gives a satisfactory range of from 1.7 minutes to 8 degrees. In anterior lesions, mostly those in the chiasmal region producing bitemporal hemianopsia, large discs detect the earliest improvement after operation. Response to large discs before operation indicates that recovery of functions may be hoped for in the direction of greatest response if satisfactory decompression be obtained. The presence of a temporal island has been found to indicate post-operative improvement. The temporal island has been found almost in the center in the neighborhood of 50 degrees, showing that this is the strongest portion of the temporal field. The process of field recovery after operation is largely the reverse of the process of damage. Cases not showing defects to normal discs should be tested with the smallest series of discs.

REFERENCES.

- ¹⁰ The Ophthalmoscope, Oct., Nov., 1914.
¹¹ Ophthalmology, Jan., 1915.

- ¹ Archives of Ophthal., Jan., 1915.
² Archives of Ophthal., May, 1915.
³ Ophthalmology, April, 1915.
⁴ Ophthalmoscope, Nov., 1914.
⁵ Archives of Ophthal., March, 1915.
⁶ Ophthalmic Record, Oct., 1914.
⁷ Archiv Ophthal., May, 1915.
⁸ Trans. A. M. A., 1915.
⁹ Ibid.
¹⁰ Ibid.

Society Report.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS.

STATED MEETING, HELD MAY 10, 1915.

(Continued from page 59.)

The President, DR. GERALD B. WEBB, Colorado Springs, Colo., in the Chair.

The Second Annual Meeting of this Association was held at the New Willard Hotel, Washington, D.C. After the meeting of the Council the scientific program was taken up.

PSEUDO-POSITIVE WASSERMANN REACTION IN A CASE OF UREMIA AND INTESTINAL TOXEMIA.

Dr. William H. Park of the New York Department of Health has given over 500 consecutive sera and the discrepancies were not so great as might have been supposed.

Dr. RICHARD DEXTER, Cleveland, Ohio: I agree with Dr. Kolmer that the antigens are a variable factor. The result of my observations showed that the cholesterine antigens give a finer test than do others. I recently had a patient who was insane; he was a young man and came under my notice because an examination of the spinal fluid was required. He had been shot through the orbit. The examination of the spinal fluid was negative, but on the week following he developed a syphilitic meningitis and the examination of the spinal fluid has since been positive. It was first thought that he had a staphylococcus infection.

Dr. JUDSON DALAND, Philadelphia, Penn.: I should like to speak regarding the discovery of living spirochaetae pallida after the administration of salvarsan. I really believe that chancres should be primarily excised and the neosalvarsan given. Ehrlich found no spirochaetae and no chancre at the expiration of twenty-four hours after the injection. Those present here cannot help but appreciate the work that has been done by Dr. Uhle. The results obtained from the various specimens and various laboratories were very important. It should be remembered by us all that when we get a positive Wassermann, it does not mean that the individual has syphilis; and if we get a negative result, it does not necessarily mean that the patient does not have this disease.

Dr. CLAUDE P. BROWN, Glenolden, Penn.: In a series of cases in which salvarsan was administered the spirochaetae were still present.

Dr. A. A. UHLE, Glenolden, Penn.: I said nothing about the technique but what I have presented was from the clinical standpoint only. In speaking of the Wassermann reaction, serologists say they wish to obviate the causes which give rise to positive reactions. It may be that the cholesterine anti-

gen, or the alcohol antigen, may be better. The workers in this field, however, have as yet no specific antigen which could be in any way relied upon.

In regard to the diagnosis of gumma of the liver, as has been referred to, we have only the clinical history and the family history to guide us; in such a case the use of the antigen is of great diagnostic import. I wonder what it means sending ten samples taken from the same individual under similar conditions to different laboratories and getting returns stating that six of them were positive and four were negative. I think the best we can do is to watch with care the work of different laboratory workers, judge who did the best work, and then to reply upon his interpretations.

There are other things besides the antigens which could account for certain discrepancies: I believe there is to be taken into account the technique. What I have given you is but a preliminary study. We hope in the near future to be able to present some uniform technique, a uniform antigen, and hope that the laboratory will greatly aid in the clinical diagnosis.

THE VACCINE TREATMENT OF RING WORM OF THE SCALP.

DR. ALBERT STRICKLER of Philadelphia, presented this paper. He stated that the vaccine treatment of ringworm of the scalp rested on the fact that there was developed in the blood of children suffering from this affection a specific antibody which produced a positive complement fixation test and gave a positive skin reaction. Dr. Kolmer and the author had found 75% positive fixation tests in children suffering from tinea tonsurans. When they injected 0.56 c.c. of a suspension of dead ring worm fungus in salt solution which had been briefly centrifuged at a low speed—so that it was about the same density as lutin—into the superficial skin of the arm of a child suffering from tinea tonsurans they obtained a reaction in the vast majority of the patients with ring worm, and negative results in their controls. After describing in detail their method of getting the vaccine for tinea tonsurans, the assayer stated that their success had depended on the incorporation of the entire fungus growth in the vaccine, the failure of the ptychophytins of Plato was probably due to the fact that the culture suspension was subjected to filtration. Too much emphasis could not be placed on this point and on the necessity of rubbing up this ring worm growth. From the growth in an ordinary Erlen Meyer flask about 500 c.c. of vaccine was made up. To this eight to ten c.c. of chloroform was added to kill the growth, and the vaccine was heated for an hour at sixty degrees C. The use of the chloroform was later discontinued. Controls for living fungi were made on French "proof agar" and for pyogenic organisms on plain agar. The vaccine was preserved by the addition of sufficient phenol to bring it up to 0.25%. It was then tubed in sterile salt solution and was then ready for use.

The vaccine might be employed in doses varying from 0.5 c.c. up to 4 c.c. It had been found of no value to employ a dose as large as the latter, the usual dose varied from 0.5 c.c. to 2 c.c. The injections were at first given at intervals of three days, but later it was deemed advisable to give them every five or six days. The injections were given preferably in the region between the scapulae. The number of injections was from seven in some patients to twenty in others. In no instance was there

any constitutional reaction. After the patient had received six or seven injections, a local reaction in the form of an infiltrated area developed in about thirty-six hours after injection, at the point of injection. In treating a case of ring worm of the scalp, hair infected with the fungus was planted on "French proof agar" according to the technique described both for the purpose of determining the type of infection and for the purpose of treatment. They then injected the patient with their stock vaccine, once every five days, giving five injections: the first 0.5 c.c., and giving 1 c.c. for the second and third injections. They then advised local treatment (cade and olive oil in equal parts) for a period of two weeks, meanwhile giving 1.5 c.c. of the vaccine every six days. This local treatment was then followed by the use of an ointment (sulp. precip. grains 20, and vaseline, one ounce) which might be applied once a day for a period of ten days or two weeks. The vaccine treatment should extend over a period of from two to three weeks. Up to date they have treated at the Philadelphia General Hospital 20 patients with ring worm of the scalp of varying degrees of severity. Of these, fourteen had been cured, two markedly improved, two improved but left before treatment could be properly carried out, three died from measles and one from pneumonia. All of these were treated with vaccines, only a weak ointment being used to stimulate hair growth in three cases. If, after giving seven or eight injections, no improvement is noted, the stock vaccine should be discontinued and an autogenous one employed.

They believe that they had in this method a safe and efficient treatment of tinea tonsurans, and that the x-ray offered no advantages over it.

A STUDY IN BLOOD COUNTS IN RELATION TO VACCINE THERAPY. AUTOINOCULATION IN THE TREATMENT OF MOUTH INFECTIONS.

DR. JOSEPH HEAD of Philadelphia presented this communication. He stated that during the past year, as in the previous years, vaccine had continued to prove of great value in the treatment of mouth infections, but it must not be forgotten that vaccine without effective surgical treatment could be of little service. The assayer showed charts which demonstrated the value of blood counts in the use of vaccines and said that the blood counts had taught him to be more moderate in his dosage, and that he had found that patients responded at least as well, if not better than when the doses were pushed to the point of getting marked reactions. He cited the blood counts in several cases which showed that without them injury might unquestionably have been done by excessive dosage with vaccines. Lymphocytosis did not seem to be as much of a factor as he had thought last year. When he had first undertaken the work he had hoped to be able to make more positive statements than his later knowledge would permit. This was largely due to the difficulty he had had in finding individuals with a normal leucocyte count.

The assayer stated that no paper on mouth infection would be complete without some reference to ameba. He had been using emetine 1/3 of a grain administered hypodermically in the arm or back for ten successive days during the treatment and had felt that as an adjunct it was a great help to the vaccine treatment for mouth infections. But he had also had remarkably good results where the

vaccine was used without emetine, results which for permanency and rapidity of action were never obtained without the vaccine. Neither vaccine or emetine could cure an advanced case of mouth infection unless the primary depots of infection were removed by good dental surgery. In speaking of the real specifics for the cure of pyorrhea, Dr. Head announced that he had one as effective for pyorrhea as the typhoid vaccine for the prevention of typhoid fever. His remedy was the autoinoculation caused by the scientific use of the floss silk and the tooth brush. He showed that the usual method of brushing the teeth was palpably ineffective. The brushes in common use were improperly constructed. They should be smaller and the bristles shorter if the real bristle friction is to be obtained. Another error was the impression that brushing the gums caused them to recede. They should be brushed vigorously. An effective method of mouth cleansing was first that the spaces between the teeth should be swept with dental floss so that all bacterial masses would be moved from the sides of the teeth and gums. This would at first cause bleeding and make the interdental spaces sore. If the infection had not spread beneath the gums beyond the reach of the floss silk, autoinoculation would soon cause a healing that was little less than miraculous. After using the floss silk, the tooth brush should be used with the short flat bristles. By means of motion pictures the writer described the various motions that were necessary for effectually cleansing the mouth and to what extent our present methods failed.

DR. C. C. BASS, Tulane University, New Orleans, La.: The subject of pyorrhea alveolaris has interested me for many months and the more I have studied this disease the deeper do I get. I am at present studying the pathology of the disease and will later take up the study of the bacteriology, then the protozoology and then the treatment of this disease. The information I have gotten during the months of study I have given to pyorrhea alveolaris presents a very appalling result, showing the great prevalence of the disease. It has taken weeks and months to enable us to make a correct diagnosis, and in some cases it has been impossible to make a correct diagnosis. The diagnoses made by the dentists are in fact no better than the diagnoses we make. The average dentist will make a diagnosis of pyorrhea alveolaris when he is able to squeeze pus from the gum or a pocket around a tooth. Whenever he sees a drop of pus, he makes this diagnosis. Sometimes the dentists will say, "There is no Riggs' disease present but simply a loosened tooth." This might be all right—it might be a pyorrhea, or the end of a pyorrhea. This condition I do not believe can be cured by the administration of medicines alone; it calls for surgical treatment. The surgical treatment was more important than any medication dreamed of. In our personal experience we have seen about 500 cases and microscopical examinations were made of all; with proper technique we have found in that number but two adults in whom we were not able to demonstrate pus and the endameba buccalis. Interesting work on this subject remains for those of the future. The endameba buccalis is the essential cause of pyorrhea alveolaris. The endameba does not attack normal tissues. The evidence is strong for a study of the sections of the pathological material at hand, that it is first necessary to have a damaged tissue, some particular tissue that

is susceptible to infection. We are now studying the pathology of the disease and later intend taking up a study of the protozoology and the treatment. We should bear in mind that the endameba buccalis lives and thrives and reproduces in the peridental membrane of the human being, and probably of other animals. This is their normal habitat. They feed upon certain cells that are found only in some suppurative foci. These cells are very numerous in suppurations next to bone tissue. If the endameba was once implanted there, in its natural habitat, it would start growing and reproduce at a rapid rate and cause trouble.

I do not believe in any treatment which does not take into consideration the rôle played by the endameba buccalis. The surgical treatment in this disease is as important as in any other disease. The lesions progress rapidly; there occurs a destruction of the soft parts and then the bone is exposed.

The duration of the disease greatly surprises me. I do not think that more than 5%, at the extreme, escape the infection before they are grown. Many people lose their teeth before the age of 30 years and the molars are the first to be affected. There was a slow sloughing process of from five to 30 or 40 years and dependent upon the bacterial flora in the individual's mouth. Everybody, I believe, would lose their teeth because of this disease if they lived long enough.

FURTHER EXPERIMENTS IN THE PRODUCTION OF IMMUNITY TO TUBERCULOSIS.

DR. GERALD B. WEBB and DR. GEORGE BURTON GILBERT of Colorado Springs, Colo., presented this communication. They recalled what they had previously shown that a thick emulsion of blood platelets added to a lethal dose of tubercle bacilli appeared to modify the course of the infection or to prevent it. However, this did not furnish a practical, safe and reliable method of inoculating living virulent bacilli for purposes of immunization. It had seemed desirable in view of the importance attached to the rôle of the lymphocyte in nature's battle against tuberculosis, to determine whether an immunization of lymphocytes added to a lethal dose of tubercle bacilli could influence or prevent infection. Lymphocytes were obtained by injecting 4 c.c. of sterile Ringer's solution into the peritoneal cavity of guinea pigs, and about ten minutes later withdrawing some of the fluid by means of capillary pipettes and immediately mixing with a definite number of bacilli in a capillary pipette by means of the Barber method. After incubating for twenty minutes this mixture was inoculated subcutaneously in the nipple area of adult guinea pigs. Samples of the fluid obtained from the injected guinea pigs, when strained, showed a practically pure emulsion of lymphocytes, at least 95%, at the time chosen as most favorable. Both normal and tuberculous guinea-pigs were used for obtaining the leucocytes in different experiments without appreciable difference in the results. The formation of a fibrin network which collected the lymphocytes and permitted only a perfectly clear fluid to be withdrawn from the pipettes was overcome by having the doses of living bacilli already picked out in several pipettes so that they would be mixed with the lymphocytes at once. In one experiment, serum, both heated to 56 c. and unheated, from both normal and tuberculous guinea pigs, was added to the lymphocytes bacilli mixture and the whole incu-

bated before inoculation. In this series of five experiments a uniform and constant action by the lymphocyte emulsion so far as actually preventing infection could not be detected. Indeed any uniform modification of the course of the disease also seemed to be lacking. The tabulated data of these experiments was present and also the autopsy results.

CONCERNING THE OCCURRENCE OF TUBERCLE IN THE CIRCULATING BLOOD.

DR. LOUIS HAMMAN, Baltimore, Md., presented this paper and commented upon the unsatisfactory state of our information concerning the occurrence of tubercle bacilli in the circulating blood. Literature on the subject is full of the grossest contradiction. Some authors claim they find the bacillemia in all cases of tuberculosis; others that they discover tubercle bacilli in the blood only in the last stages of the disease; still others that they find them even in the last stages of the disease only exceptionally.

The results of microscopical examination of the blood are unreliable, since there are so many possible sources of error; but even by animal experimentation, some authors report a very large number of positive results; some, indeed, as high as 50% of the cases examined.

My investigation of this question upon patients in advanced stages of pulmonary tuberculosis and in animals inoculated intravenously, leads me to draw the following conclusions:

Tubercle bacilli occur in the blood in sufficient number to be demonstrated by animal experiment only in the very last stages of pulmonary tuberculosis in human beings, and then only infrequently. In animals they are constantly found when a very large number of organisms is injected intravenously. When smaller numbers are injected, and the disease remains localized relatively to the lungs, no bacillemia occurs until towards the end of the investigation, when the disease becomes general.

DISCUSSION.

DR. GERALD B. WEBB of Colorado Springs, Colo.: It is puzzling to men who are working on tuberculosis to know how to interpret the various results they obtain regarding the occurrence of the tubercle bacilli in the circulating blood. Anyone who studies the growth of the tubercle bacilli in the incubator realizes what a sticky mass there is to deal with. The typhoid bacilli, as you know, made no such sticky emulsion, but with the tubercle bacilli it is different. In their work in inoculating this bacillus it is extremely difficult to do the work because of this stickiness. In these cases of bacillemia, the tubercle bacilli are said to be frequently found in the circulating blood. The clinicians must realize that they did get in. They must get there through the circulating blood stream and settle in certain regions. Dr. Webb asked Dr. Hamman what he knew regarding the type of the tubercle bacilli described by Langduzyns, that was, the typhoid type of bacilli.

THE VIRULENCE OF VARIOUS STRAINS OF HUMAN TUBERCLE BACILLI.

DR. GEORGE BURTON GILBERT and DR. HAROLD GREGG of Colorado Springs, Colo., presented this preliminary report. They said that the use of live

bacilli for the production of immunity had been of little avail because of their inability to control the exact numbers and the virulence of the bacilli. The ingenious device of Professor M. S. Barber made it possible to isolate and inoculate any given number of virulent tubercle bacilli. Using this same method it has been possible to show great variation in the minimum lethal dose of different virulent cultures. The authors presented a list of certain cultures and the smallest number so far found capable of producing progressive and fatal tuberculosis in adult guinea pigs. In an effort to obtain a culture of moderate virulence for future work along immunological lines, it was decided to obtain a large series of tubercle bacilli from different types of cases and from different organs of the body, and then to study these in detail as to virulence. The cultures were obtained using the media recently advocated by Petroff, consisting of one plus 10,000 gentian violet, two parts of whole egg and one part meat juice. Definite number taken from the fresh cultures less than one month old were inoculated subcutaneously in the nipple area of adult guinea pigs. Both local and internal lesions were studied. Owing to the lack of guinea pigs, only six cultures could be reported on at the present time. The tabulated results with the various cultures showed the absence of both local lesions and local regional glands in seven instances where macroscopic disease was found in one or more internal organs. This was quite unusual in their experience. It was certainly safe to assert that great differences in virulence occurred in virulent cultures obtained from various cases. Whether cultures obtained from varied organs varied regularly in virulence remained to be determined.

THE DIRECT TREATMENT OF CEREBROSPINAL SYPHILIS ACCORDING TO THE METHOD OF SWIFT AND ELLIS.

DR. CLYDE L. CUMMER and DR. RICHARD DEXTER of Cleveland after outlining quite fully the work of Swift and Ellis in the treatment of syphilitic diseases of the central nervous system, and reviewing a number of the reports of others who had employed this technique, concluded that from this work one gained the impression that the definite changes could be brought about in cases of paresis, but that the permanence of the improvement was still open to question. There was no doubt that many cases of tabes and cerebrospinal syphilis had been markedly improved symptomatically and that the laboratory findings in certain cases had returned to normal. Practically no changes had been recorded in the deep reflexes or the pupillary responses in tabetics. Certain criticisms of this method had been made, one being its danger. A careful search of the literature showed that the reported deaths had been among paretics, and no fatalities had occurred after the treatment of tabetics. The number of fatalities in the total number of treatments was not alarming, considering the desperate outlook in this condition. Another criticism was that arsenic had access to the spinal fluid when present in the blood stream, and therefore its direct introduction into the subarachnoid space was needless. This point was at least open to argument, since Camp stated that he was unable to discover arsenic in the subarachnoid fluid after salvarsan had been administered intravenously. The main question was whether this method of treatment was productive of symptomatic and functional improvement as well as the indubitable

improvement in laboratory findings. It was to aid in answering this question that this series of cases was reported. While the number of cases was limited, the value of the report was enhanced by the length of time through which they had been able to continue their observations. In addition to two preliminary cases that were under their care for so short a time that they could not be considered, they had treated eight patients suffering from definite *tabes dorsalis* or *syphilitic meningo-endarteritis*. They had followed rigidly the Swift-Ellis technique which they outlined. Their cases were divided into three classes accordingly as they showed decided clinical improvement, moderate or slight clinical improvement, or had been under observation so short a time that it was unfair to draw conclusions. The cases were all reported in detail and carefully tabulated records of the laboratory findings were presented. The first patient, a man of 29 years having cerebrospinal syphilis, had been under observation for over two years. During this time he had received twelve intravenous injections of *salvarsan* or *neosalvarsan* (the total being equivalent to 5.4 g. of *salvarsan*), and seven injections of serum intraspinously. In addition to this, much mercury had been given in the form of intramuscular injections and inunctions. He now reported that he had had only one attack of pain during the past year. The second case was one of only moderately advanced *tabes dorsalis* in a man of forty-five years of age, in whom serologically there was marked improvement. The neurological physical examination showed absolutely no change except a restoration of sensory perception. From a functional and symptomatic standpoint this patient was vastly improved.

The third case was also one of moderately advanced *tabes dorsalis* who had been under observation for eleven months and, clinically, his case was one of great betterment. The pains had disappeared except for recrudescence in a mild form when fatigued. Physical examination showed no change in pupils or reflexes, but the *Romberg* sign was less marked and the muscle sense was improved. The laboratory findings were the most gratifying in the entire series. In the fourth case, one of early *tabes* in a woman 34 years of age, the improvement after the institution of intravenous and intraspinous treatment was rapid and striking. The laboratory finding was most satisfactory while the clinical result was the most striking in the series. The pupillary reaction and the ankle and knee jerks were unchanged. The fifth case was one of moderately advanced *tabes* in a man 39 years of age. The clinical results in this case were a restoration to economic efficiency, a marked gain in weight, and a removal of certain unpleasant symptoms due to the marked sensory changes which occurred early in the condition. The laboratory findings in this instance were greatly improved. Of the class showing moderate or slight improvement, one of advanced and one of moderately advanced *tabes*, the latter was notable in the entire disappearance of the Wassermann reaction. The spinal fluid of the advanced case showed no improvement over the first, barring the reduction in the cell count. After reviewing the histories of the cases that have been under treatment too short a time to enable one to draw any conclusions, they summarized their work as follows. They had given forty eight intraspinous injections of serum, and seven treatments of a similar nature not reported in detail, making a total of 585. They had had no untoward or unfortunate results in any

instance. With all the patients but two, sharp reactions had occurred following the intraspinous injections. When any form of crisis or lancinating pain had been present, the reaction had usually taken the form of an exacerbation of this symptom. The greatest improvement had usually followed the severest reactions.

With reference to changes in laboratory findings, study of the table showed that lymphocytosis disappeared quite promptly, after one, two, or three injections. The globulin test was usually slowest to disappear. In their experience the Wassermann reaction was the most obdurate of the laboratory findings. Practically the only changes in the physical condition which they had been able to detect had been restoration of sensation, when this had been impaired, disappearance of *Romberg's* sign, increase in muscular strength, and a diminution in ataxia. In no instance had they noted pupillary reactions return to normal, nor had absent deep reflexes reappeared. The greatest improvement had been obtained in symptoms. Lancinating pains had disappeared entirely or were greatly diminished, and in one instance gastric crises had disappeared. The striking feature was the improvement in general condition, in weight, strength, and well being.

In conclusion they felt that they could state fairly that the Swift-Ellis method was safe when the original technic was followed painstakingly. Persistence was necessary to obtain the best results. This treatment was a valuable adjunct in the treatment of syphilitic disease of the central nervous system. The claims of the originators were sustained as far as *tabes* and central system syphilis was concerned. It was a method which was not necessary in all cases, but applied carefully and controlled intelligently it would bring about a definite amelioration in laboratory signs and in symptoms where the accepted forms of treatment had failed.

(To be continued.)

Book Reviews.

Record Book for Measured Feeding. By WILLIAM R. P. EMERSON, M.D., Professor of Pediatrics, Tufts Medical School. Boston: F. H. Thomas Company. 1915.

This record book consists primarily of a number of pages properly ruled for the accurate keeping of the diet and its caloric value. At the beginning is given a list of the amounts of all the ordinary articles of diet required to yield 100 calories, with the proportion of the calories yielded by the protein, fat and carbohydrate. Instructions are also given how to calculate the number of grammes of the different food elements from the number of calories taken. Tables are given of the heights and weights of children and adults, and of the caloric requirements at various ages. This record book should be of value to all those for whom it is necessary to keep an accurate record of their diet.

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CONSTITUTIONALITY OF THE HARRISON AND SHERLEY LAWS.

In the weekly report of the United States Public Health Service for December 10, 1915, is recorded a decision by the United States District Court for the western district of Washington, relative to the constitutionality of Section 8 of the Harrison Narcotic Law. This section provides that possession or control of the habit-forming drugs named in the act, by a person who has not registered and paid the special tax, is unlawful, and such possession or control is made presumptive evidence of violation of the act. The case in question was made a test case to determine as a precedent the constitutionality of this section. The justice, Judge Neterer, after summarizing the case and citing previous decisions, proceeded as follows:

"The purpose of the drug act in issue is expressed in its title:

An act to provide for the registration of, with collectors of internal revenue, and to impose a special tax upon, all persons who produce, im-

port, manufacture, compound, deal in, dispense, sell, distribute, or give away opium or coca leaves, their salts, derivatives, or preparations, and for other purposes.

I think we may assume, and that the court will take judicial notice of the fact, that no opium is grown or produced in this country, and that the purpose of the act is to prohibit the importation of opium. The laws with relation to such importations have become more stringent with each succeeding enactment.

Section 1 of the act in question provides, among other things:

That on and after the 1st day of March, 1915, every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any opium or coca leaves or any compound, manufacture, salt, derivative, or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of business. . .

And it further provides:

At the time of such registry, and on or before the 1st day of July annually thereafter, every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs shall pay to the said collector a special tax at the rate of \$1 per annum.

Section 2 provides a lawful and legal method of acquisition by any person entitled to have possession of these drugs.

Section 8 provides:

That it shall be unlawful for any person not registered under the provisions of this act, and who has not paid the special tax provided for by this act, to have in his possession or under his control any of the aforesaid drugs, and such possession or control shall be presumptive evidence of the violation of this section and also of the violation of the provisions of Section 1 of this act. . .

the purpose of Congress being to prohibit the importation, manufacture or sale of the drugs described; and by this act the drug became an 'outlaw' in the country; its presence Congress has the right to trace, and has the power to punish any person in whose possession this 'outlawed' article may be found. The possession of such drug or control thereof is made presumptive evidence of the unlawful importation, manufacture, etc., as well as an obligation to pay the special tax provided by the act, and a failure to register and pay the tax as provided in Section 1 would be a fraud upon the United States, in that it deprived the Government of the revenues provided by the act.

In *United States v. Stowell* (133 U. S., 1; Sup. Ct., 244; 33 L. Ed., 555) the court says:

By the now settled doctrine of this court, notwithstanding the opposing dictum of Mr. Justice McLean in *United States v. Boxes of Sugar* (7 Pet. [32 U. S.], 453, 463; 8 L. Ed., 745) statutes to prevent frauds upon the revenue are

considered as enacted for the public good and to suppress a public wrong, and therefore, although they impose penalties or forfeitures, not to be construed, like penal laws generally, strictly in favor of the defendant, but they are to be fairly and reasonably construed, so as to carry out the intention of the legislature.

Congress, having the power to exclude the drug entirely from the United States, and the right to regulate its relation to interstate commerce, and to levy a tax, must be held to have the right to make it unlawful for any person who has not complied with the provisions of the act by registration or paying a tax, to have in his possession this 'outlawed' article. The act must be construed as a whole, and force given to every part when this can be done."

The court, therefore, decided that the defendant's demurrer to his previous conviction should be overruled and that this section of the Harrison Narcotic Law stands as constitutional.

In the weekly report of the United States Public Health Service for December 17, 1915, is recorded a further judicial decision in construction of Section 8 of the Harrison Narcotic Law.

In a series of five test cases the United States District Court for the state of Montana rendered in part the following as its opinion:

"Of the act referred to in the indictment (Acts 63d Cong., 3d sess., c. 1), section 1 provides that 'every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away opium or coca leaves or any compound, manufacture, salt, derivative, or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of business, and place or places where such business is to be carried on,' and on or before the 1st day of July annually thereafter shall pay a special tax; and also that it shall be unlawful 'to produce, import, manufacture, compound, deal in, dispense, sell, distribute, or give away' any such drugs without having registered and paid the tax. Section 8 provides that it shall be unlawful for any person not registered under the act and who has not paid the tax to have in his possession any of the drugs, and also that possession of any of the drugs shall be presumptive evidence of violation of both sections 1 and 8. Section 9, read in connection with section 335 of the Federal Penal Code (Act Mar. 4, 1909, c. 321, 35 Stat. 1152 [Comp. St. 1913, sec. 10509]), makes any violation of the act a felony. The act, whether of police or revenue, is of good purpose. What it will accomplish is another matter.

Any person convicted of its most violent violation—the most law-abiding druggist or physician or like person in legitimate possession of the drugs, who inadvertently allows the annual tax to become delinquent for a day—though fined but \$1, is made a felon and infamous. And this

for a mere legal infraction, and not a true crime, is a consequence shockingly disproportionate to the offense, is antagonistic to sound criminal economics, and is abhorrent to justice. It goes without saying that because thereof under such laws prosecutions halt and convictions fail in many cases, its effect is usurpation of the pardoning power, unequal administration of criminal law, and favored and disfavored classes of offenders; the inevitable result being resentment and prejudice against courts and government, law and order, and impairment of and danger to the general well-being of society. All these evils could and ought to be avoided by repeal of section 335 and its arbitrary stamp of felony and infamy upon so many petty violations of laws of the United States.

In the instant cases, aside from constitutional objections urged, but unnecessary to further note, defendants maintain (1) that mere consumers of the drug and in possession of same only for their own consumption are not by the act required to register and pay the tax, and (2) that the indictments do not show that defendants are of any of the classes by the act required to register and pay the tax. The prosecution contends contra the first proposition, and that in view of section 8 aforesaid there is no support in principle for the second.

Having in mind that taxes can be imposed and statutory offences created only by direct, clear, and apt language, it seems clear that there is nothing in the act imposing the duty of registration and payment of taxes upon mere consumers of the drugs. They are not within section 1, and section 8 does not purport to extend the registration and taxation features of the act to them, or to any one, but only to make unlawful mere possession of the drugs by any person of the classes by section 1 required to register and pay, and who have not, and to create a statutory rule of evidence.

And this latter has misled the prosecution to believe that the essentials of the offense need not be set out in the indictments, but only this rule of evidence—the possession of the drugs, from which in some cases the offense may be inferred; that is, in the cases of those by section 1 required to register and pay the tax. Whenever an offense can be committed by only certain classes of persons, the indictment must expressly allege that accused is of those classes or it is fatally defective in substance; for lacking such allegation, all alleged may be true, and accused be innocent. Furthermore, lacking such allegation, the uncertainty of these indictments is such that defendants might be repeatedly tried on the like and be unable to plead former judgments in bar. Indeed, the prosecution states that, though they are duplicates in form and substance, some of these indictments are against mere consumers of the drug."

Finally, in the weekly report of the United States Public Health Service for December 24, 1915, appears a third judicial decision, holding that the law does not limit the amount of habit-forming drugs which may be prescribed under the Harrison Narcotic Law. This opinion was delivered in a case in which a physician, who had registered and paid the tax, was indicted for alleged violation of the law, the charge being that he prescribed drugs enumerated in the act in quantities more than were necessary to meet the immediate needs of the patient, and that he did not prescribe in good faith and as a medicine. The opinion, as rendered by Judge McCall of the United States District Court for the Western District of Tennessee is in part as follows:

"The defendant demurs to the indictment upon seven grounds. The first five are overruled. The sixth and seventh will be considered together, and are to the effect that the acts of the defendant averred in the indictment are not prohibited by law, nor are they in violation of any law of the United States.

"The indictment is drawn under section 2 of the act of Congress approved December 17, 1914, known as the Harrison Anti-Narcotic Law. Section 2 provides: (1) That it shall be unlawful for any person to sell, barter, exchange, or give away any of the drugs mentioned in the act, except in pursuance of a written order of the person to whom such article is sold, bartered, exchanged, or given. (2) Every person who shall accept any such order, and in pursuance thereof shall sell, barter, exchange, or give away any of the aforesaid drugs, shall preserve such order for a period of two years. (3) Every person who shall give an order as therein provided to any person for any of the aforesaid drugs shall, at or before the time of giving such order, make or cause to be made a duplicate thereof, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of acceptance of such order shall preserve such duplicate for a period of two years. It is further provided that nothing contained in section 2 shall apply to the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist or veterinary surgeon, registered under the provisions of the act, in the course of his professional practice only: *Provided*, That such physician, dentist or veterinary surgeon shall keep a record of all such drugs dispensed or distributed, showing the amount dispensed or distributed, the date and the name and address of the patient, to whom such drugs are dispensed or distributed, except such as may be dispensed or distributed to a patient, upon whom such physician, dentist or veterinary surgeon shall personally attend, and such record

shall be kept for a period of two years from the date of dispensing or distributing such drug.

"An attentive examination of the indictment discloses that the offense with which the defendant is charged is dispensing, distributing, and prescribing the prohibited drugs in quantities more than was necessary to meet the needs of a patient, and that they were not distributed, dispensed, and prescribed in good faith and as a medicine.

"As I understand section 2 of the act, the only thing required of a person, who shall give an order as provided in said section for the drugs mentioned in the act, is that he shall make or cause to be made, at the time of giving the order, a duplicate thereof, on a form issued by the Commissioner of Internal Revenue, and in case of the acceptance of said order he shall preserve such duplicate for two years. The defendant is not indicted for failure to do either of these last-mentioned things.

"Subsection (a) of section 2 provides that nothing contained in the section shall apply to physicians, dentists, or veterinary surgeons, registered under the act, who dispense or distribute any of the drugs in the course of their professional practice, provided that they shall keep a record of all such drugs dispensed or distributed, showing the amount dispensed or distributed, the date, and the name and address of the patient to whom such drugs are dispensed or distributed, unless the physician shall administer them personally to the patient. But the defendant is not indicted for violation of subsection (a) but, as has been said, he is indicted for giving a prescription for said drugs in quantities more than was necessary, and not in good faith and as a medicine.

"I fail to find in the act of Congress under examination any language making the doing of the things with which the defendant is charged a violation of law. In other words, there is no limit fixed to the amount of said drugs that a physician may prescribe, nor is there any duty imposed upon him, other than to keep a record of all such drugs dispensed by him, and the name and address of the patient, except those to whom he may personally administer, and that he must preserve the records for a period of two years. For failing to do either of these things he is not indicted.

"The result is, I think, the sixth and seventh grounds of the demurrer are good, and an order will be entered quashing the indictment."

These three recent judicial decisions dealing with different aspects of the Harrison Narcotic Law, are of significant importance in determining the constitutionality and interpretation of certain provisions of that law, which have hitherto afforded cause of uncertainty or disagreement.

In this connection there is similar interest in another recent decision by Justice Hughes of the United States Supreme Court relative to and upholding the Sherley amendment of 1912 to the federal pure food law. After ten years of legislation and litigation, this decision should settle definitely the interpretation of this law and enable prosecutions to be made under it. There had been considerable discussion following a previous decision of the court relative to the application of the provisions of this law to misbranded drugs and medicines.

"For a time it was argued by Government officials that the 1906 pure food law, designated as misbranded drugs or medicines accompanied in interstate commerce by knowingly false statements about the curative effects of the compounds. The Supreme Court decided, however, that the 1906 law applied only to misbranding as to the identity or composition of drugs.

"In response to a resulting message from President Taft in 1912, Congress enacted the Sherley amendment, which the Supreme Court held yesterday struck precisely at misstatements either on the label or in printed circulars accompanying medicines.

"We find no ground," said Justice Hughes, "for saying that Congress may not condemn interstate transportation of swindling preparations accompanied by false and fraudulent statements as well as lottery tickets."

"The decision was announced in the case of a Chicago drug concern which shipped medicine from Chicago to Omaha, described in an accompanying circular as a compound which it knew had cured and would cure tuberculosis. The Government proceeded under the Sherley amendment to confiscate the product and the Nebraska Federal District Court condemned the shipments."

The confirmation of this action by the Supreme Court is an important step in the movement aimed at the elimination of the patent medicine evil.

LEPROSY IN THE PHILIPPINES.

In the issue of the JOURNAL for July 8, 1915, we commented editorially on recent work in the treatment of leprosy in the leper colony at Molokai, Hawaii, particularly with reference to the use of chaulmoogra oil. In the January number of *World's Work* is a particularly interesting article by Dr. Victor G. Heiser of the United States Public Health Service on the study and control of leprosy in the leper colony at Culion

in the Philippine Islands. Especially noteworthy is his encouraging account of the success of treatment with chaulmoogra oil, and the report that twenty-three lepers so treated have been discharged from Philippine hospitals as cured.

For centuries it has been a tradition in Eastern countries that leprosy could be cured by drinking chaulmoogra oil, and many stories were prevalent of cures. Several years were believed to be necessary for a cure, but as the oil is very nauseating, few could keep up the treatment for more than a few months. A method has now been devised whereby the oil is mixed with camphorated oil and resorcin, and given hypodermically. This treatment is being used not only in the Philippines, but in the leper colonies of Hawaii, the Straits Settlements, the Malay States and India, and everywhere it is resulting in most satisfactory progress. If this loathsome malady, one of the oldest in the history of the world, has found its conqueror, the generous efforts of our Government to develop and provide means of carrying on this treatment are indeed commendable.

Dr. Heiser sums up the results of the treatment so far, as follows: It produces apparent cures in some cases, causes great improvement in many others, and arrests the progress of the disease in every instance in which it has been tried.

When the United States took up the treatment of leprosy in the Philippines there were about six hundred cases in the Island, and because of the freedom allowed the sufferers, about one thousand each year were contracting the disease. To segregate this large number of victims it was deemed necessary to reserve one of the islands of the group and remove to this every leper or person suspected of having the disease. The Island of Culion was chosen, as being well located, sparsely inhabited, having plenty of fresh water, an excellent harbor, and offering excellent opportunities for the lepers to engage in agricultural pursuits. To bring a complete town into being, lay out streets, erect over 400 dwelling houses, a theatre, town hall, school building, equip it with a water, sewer and lighting system, build docks and such other modern conveniences as one would expect to find in a well-ordered town, was a colossal task. At one time 300 laborers ran away at the first report that a shipload of lepers was to arrive on the island. Skilled mechanics had no desire to

undergo the isolation, and the class that could be induced to go often lacked skill and made blunders which sometimes took months to correct. There was no telegraph, and mail steamers arrived only once every three weeks. Many of the building materials had to be obtained in the United States or Europe, and this alone required six months or more. Ultimately, however, it was accomplished. While the construction work was in progress a campaign of education was being carried on throughout the Philippine Islands. The danger of contamination by lepers was impressed upon the people, and pictures of the colony at Culion were shown. If possible, it was desirable to induce the lepers to go to the colony without the use of force. The means used were successful, and although families had to be broken up, husbands and wives and children and parents separated, the colony was filled by the voluntary action of the lepers themselves. In all, 8000 persons were transferred to the colony, and the colony numbers today about 3500 lepers. The lepers are given all possible liberty. They organize their own police force, elect their own councilmen and mayor and take some care of the island. It was hoped that they might engage in sufficient farming to supply themselves with food, but because of their natural tendencies and the effects of their disease, few can be induced to any activity in this pursuit. The question of cattle raising is now under consideration. This promises to be an occupation in which lepers might be successful on account of the fact that cattle do not contract leprosy. To stimulate some industrial activity among the patients, a store has been established and a special currency coined for the exclusive use of the lepers, the denominations being the same as those of the regular Philippine currency.

Considering the possible result of an almost entire eradication of leprosy from the Philippines and the successful treatment of the disease by this new method, the outlook for controlling this malady is indeed encouraging.

OPENING OF INFANTS' HOSPITAL.—Invitations are issued by the president and directors of the Infants' Hospital to the formal opening of the new building, 55 Van Dyke Street, Boston, on Thursday, January 20, 1916.

The speakers will be President Charles W. Eliot, Dr. John Collins Warren, and Dr. John Lovett Morse. Dr. Clarence J. Blake will preside, and the new George A. Draper Ward will be opened for inspection.

PSYCHOLOGICAL STUDY OF CRIMINALS AT THE MASSACHUSETTS STATE PRISON.

In a previous issue of the JOURNAL we commented on the results of the examination of the mental status of 47 prisoners in the Massachusetts State Prison. The State Board of Insanity now prints in its latest bulletin (No. 16) the results of the examination of 53 more prisoners, and will publish in a third report the completion of its examination. Summarizing the total number of one hundred cases, the diagnoses made are as follows:

Not presenting any definite abnormal condition..	38
Feeble-minded	22
Alcoholism	13
Border line	6
Insane	4
Giving history of attacks of insanity	4
Morphinism	3
Psychoneurosis	1
Homosexual	1
Not determined	7

Dr. A. W. Stearns, who has conducted the examinations, makes the following comments:

"The large group of 38 can hardly be called normal. Many present decided peculiarities, both physical and mental. But few are well-poised men of ability. However, as this study does not go beyond general psychiatric limits, no attempt will be made to further classify this group.

"From the history and examination of 47 cases, mental defect was suggested, so that they were referred to the psychological examiner. Twenty-three of these showed an intellectual age under twelve, and so were classed by him as feeble-minded. A few would perhaps not be considered committable by an alienist; a few not included in this group might be considered committable. Almost the whole group would very properly be committed under the defective delinquent act, if it were in effect.

"Thirteen cases were classed under alcoholism. Although a much larger number of patients drink habitually, and a good many to excess, only those have been put in this group who are confirmed inebriates or whose drunkenness seemed directly responsible for the crime.

"On account of unwillingness to talk, physical illness, etc., seven patients could not be examined with sufficient thoroughness to warrant a diagnosis.

"Six cases showed undoubted evidence of defect, but as their intellectual age was at the point of division between feeble-minded and not feeble-minded, they have been called border-line cases.

"The small size of the insane group (4 cases) is accounted for by the fact that during the past

year there have been 16 commitments as insane from the State Prison to Bridgewater. Two of these patients have been to Bridgewater but have later been returned. The other two have been committed to Bridgewater since examination.

"Four patients are now sane, but give a history of an attack of insanity. These cases have all been committed to Bridgewater and then returned recovered."

From this work, so far as it has gone, several conclusions may be drawn. In the first place, it will be seen that over one-half of all cases come within the legitimate field of psychiatry. The large number of feeble-minded certainly need special care. It also seems that examination after sentence, though valuable, is not to the best interests of the patient. If the condition of these patients were known, and each patient's best treatment—provided such treatment did not conflict with the interests of society—were the motive behind penal procedure, a different course might often be adopted.

In the absence of any adequate examination before sentence, it would seem wise that a thorough study be made of each case upon admission to Charlestown. This would probably require the entire time of at least one social worker, one psychological examiner, with the part time of a psychiatrist and of the prison physician. The insane and feeble-minded might be immediately transferred to Bridgewater. The result of such study would be extremely valuable: first, in determining the handling of any given case while in prison; next, in considering the matter of parole or pardon; and finally, in case of subsequent arrest.

INFLUENZA, PNEUMONIA AND ACIDOSIS.

In last week's issue of the JOURNAL we commented editorially on the epidemics of acidosis and influenza, then prevalent in the community. The succeeding days mark a rapid wane of the former infection. On January 9 two new cases were reported in Belmont, Mass., one of which has since died and the other recovered. A death from acidosis also occurred in Everett, Mass. The prevalence of respiratory infections, however, has continued, though abated in a considerable degree. During the first nine days of January there were 104 deaths from pneumonia and fifteen from influenza in Boston. On January 10, ten deaths from pneumonia and two

from influenza were reported. The period of extreme cold weather which occurred at this time had the effect still further of checking the spread of the infection. On January 12, there were only five deaths from pneumonia and none from influenza. During the four days ended at noon on January 12, there were forty-four deaths from pneumonia and ten from influenza. During the week ended January 15, there were in Boston 19 deaths from influenza and 73 from pneumonia.

Report from Providence, R. I., on January 9, states that a similar epidemic has prevailed there, especially in all public institutions.

It has been suggested by Dr. Mahoney, as Boston city health commissioner, that the state health department should make minor respiratory infections reportable in order that there might be more accurate information of their prevalence as endemics in different communities. The lesson of the present epidemic in Boston should be that if recurrence of similar visitations is to be prevented, there should be some method for the prompt isolation and treatment of the early cases, from which the later widespread distribution of sickness is derived.

TREATMENT OF NEPHRITIS AND CARDIAC DISEASE.

We desire again to call attention to the JOURNAL's new department of therapeutic and preventive medicine, which for the present issue, is placed in a leading position in our columns. Dr. Phipps's article on nephritis presents some of the latest practical advances in the treatment of that disease.

In another column, in an original article, which might appropriately have been included under the same heading with the foregoing, we take pleasure in publishing a useful paper by Dr. Wentworth, summarizing the practical treatment of cardiac affections in children from the standpoint of an out-patient department which in many respects is essentially that of the busy practitioner. Particular attention is called to this latter article, as the first of a series, by Dr. Wentworth and other authors, on various aspects of the problems presented in the scientific study and clinical management of cardiac diseases in various classes of patients and under varying conditions. Further articles of this series will appear in subsequent issues of the JOURNAL during this winter and spring.

MEDICAL NOTES.

TRANSFER OF NEW YORK QUARANTINE.—Report from Washington, D. C., states that on January 12 the quarantine offices of the port of New York were temporarily transferred from state control to the federal supervision of the United States Public Health Service. This transfer of jurisdiction will continue in force until the New York General Assembly passes legislation to make it permanent. This action placed under federal control all American ports with the exception of Baltimore. Surgeon-General Blue has detailed Dr. L. E. Cofer of the Public Health Service to take charge of the New York station.

PREVALENCE OF MALARIA, PELLAGRA, POLIOMYELITIS, SMALLPOX AND TYPHOID FEVER.—The weekly report of the United States Public Health Service for December 31, 1915, states that during the month of November in that year there were in Mississippi 11,764 cases of malaria, 739 of pellagra, 72 of smallpox and 562 of typhoid fever. During the same period there were in Kansas six cases of poliomyelitis, 232 of smallpox and 192 of typhoid. There were 156 cases of smallpox and 43 of typhoid in Wisconsin; 127 of smallpox and 133 of typhoid in Indiana; 146 of smallpox in North Dakota and 55 of typhoid in Washington.

BUBONIC PLAGUE IN INDIA.—During the ten months from January to October, 1915, inclusive, there were reported in India, 427,381 cases of bubonic plague with 347,821 deaths. The distribution of the disease was almost universal, except that there were no cases in Assam, few in Coorg, and in Bengal the disease was confined chiefly to Calcutta.

TYPHUS FEVER IN RUSSIA.—Report from Warsaw on December 17, 1915, states that on that date there were in that city 897 cases of typhus fever, of which 800 were among refugees.

AMERICAN ASSOCIATION OF ANATOMISTS.—At the recent annual meeting of the American Association of Anatomists in New Haven, Conn., the following officers were elected for the ensuing year: President, Dr. Henry H. Donaldson, Wistar Institute; vice-president, Professor Clarence M. Jackson, University of Minnesota; members of the executive committee, Professor Eliot R. Clark, University of Missouri, and Professor Reuben M. Strong, University of Mississippi. Professor C. R. Stockard, Cornell Medical School, New York City, remains secretary of the Association.

AWARD OF MOXON AND LEEUWENHOEK MEDALS.—It is announced that the Moxon gold medal has been awarded by the Royal College of Physicians of London to Dr. Dejerine, pro-

fessor of diseases of the nervous system in the medical faculty of Paris. This medal is awarded triennially for distinguished research in clinical medicine. Its previous recipients have all been British physicians,—in 1891 Sir Alfred Garrod, in 1894 Sir William Jenner, in 1897 Sir Samuel Wilkes, in 1900 Dr. William Tennant Gairdner, in 1903 Dr. John Hughlings Jackson, in 1906 Dr. Jonathan Hutchinson, in 1909 Sir William Richard Garvers, and in 1912 Sir William David Ferrier.

It is announced that the Leeuwenhoek gold medal has been awarded by the Royal Academy of Sciences of Amsterdam to Surgeon-General Sir David Bruce, in recognition of his discovery of the micrococcus melitensis as the etiologic agent of Malta fever. In addition, Dr. Bruce discovered the trypanosome which is the cause of nagana or African cattle fever, transmitted by the tsetse fly, and made extensive researches into other African tropical diseases, especially the sleeping sickness. The Leeuwenhoek medal is awarded decennially for the most important work done during the decade on microscopic organisms, and in commemoration of their original discovery by Leeuwenhoek in 1675.

NEW YORK DEATH RATE FROM GRIP AND PNEUMONIA.—During the week just ended there was a large increase in the number of deaths reported from grip and pneumonia in New York City, as compared with the number reported from these causes last year. Thus there were 74 deaths from grip as compared with 5 in the corresponding week last year. Similarly there were 272 deaths from pneumonia, as compared with 140 last year. Estimating the number of cases from the number of deaths, probably not less than 2000 new cases of grip and pneumonia occurred in the city last week.

Evidently New York is in a state of siege from this disease, and it behooves the individual to be in a state of preparedness. Preparedness can best be obtained by following the advice recently given by the Department of Health, to avoid overcrowded and overheated places, to dress sufficiently warm when going outdoors, to keep away from those who cough and sneeze, to avoid alcohol, and to secure plenty of rest, and an abundance of fresh air.

The total number of deaths reported during the week was 1752, as compared with 1592 during the corresponding week of 1914, the respective rates being 15.91 and 14.87 per 1000 of population. The increase in the mortality during the past week was in the middle-age groups, the mortality under 1 year and under 5 years being considerably lower than during the corresponding year of 1914.

INCREASE IN COST OF DRUGS.—Report from Washington, D.C., on January 10, states that on account of continued rise in the cost of drugs,

particularly alkaloids and coal tar products, the United States Bureau of Mines, after investigation, will probably recommend to Congress that American wholesale druggists be encouraged in the manufacture of basic materials for synthetic drugs. The following table shows the comparative casts of some of the common drugs at present and a year ago.

Drug.	1915. Price.	1914. Price.
Quinine	\$1.25 oz.	\$.28
Calomel	2.85 lb.	.90
Bromides	5.00 to 6.00 lb.	.40
Carbolic acid	2.00 lb.	.18
Mercury	2.50 lb.	.50
Chloroform	1.10 lb.	.50
Creosotes	6.50 lb.	.60
Pernanganate potash ..	2.30 lb.	.15
Glycerine70 lb.	.22
Paraldehyde	3.20 lb.	.80
Manna	1.25 lb.	.30
Senna40 lb.	.15
Castor oil18 lb.	.09
Phenolphthalein	10.00 lb.	2.50

SENDING AN ACKNOWLEDGMENT OF BIRTH CERTIFICATES TO PARENTS.—In January, the New York Department of Health inaugurated a practical and efficient method of reaching the public at large in so far as setting them to think of the importance of birth registration and the saving of infant life. Hereafter the receipt of the birth certificate in the Bureau of Records will be followed immediately by an acknowledgment of said birth to the parent in the form of a letter from the Commissioner of Health, a certificate showing the record of the birth, and educational literature giving an outline of the essential features of child care. Postal acknowledgment of all births reported by physicians, midwives and institutions will obtain as heretofore.

The letter from the commissioner, in addition to acknowledging the receipt of the report of the birth, urges the mother to keep the certificate because it will prove of great value during the life of the child, and may be used as a certificate for entering school or for obtaining an employment certificate at the legal working age of 14 years. Attention is also called to the fact that thousands of babies die unnecessarily each year, and the desire of the Department to give advice and information at the Infants' Milk Stations to all mothers who cannot afford to employ private physicians.

The certificate will be in the form of a card stating that a certificate of birth of an infant, bearing the given name, is on file at the office of the Department of Health. The certificate also gives the date and place of birth, and the name of the father and mother, and it bears the signature of the assistant registrar of the respective borough.

In this way an educational propaganda will be instituted and a large number of mothers will be informed of the ways and means in which the Department is ready and willing to assist them in the care of their infants, if they are unable to

pay for the services of a physician. It is also hoped in this way to reach a large number of native mothers, who have heretofore failed to come under any direct supervision of the Department of Health.

Inasmuch as the public will be advised through press notices to expect this acknowledgment of birth from the Department of Health, the importance of physicians, midwives and institutions recording all births without delay becomes evident.

TRACHOMA.—The National Committee for the Prevention of Blindness has issued a pamphlet entitled "Trachoma—A Menace to America," prepared by Mr. Gordon L. Berry, field secretary of the organization. This document is not offered primarily as a treatise on trachoma from the medical standpoint, but rather as a popular presentation of the subject for the education of the layman as to the prevalence of this disease, its effects upon vision and the methods adopted for its control and eradication. The use of technical terms has been avoided so far as possible in order that all phases of this important public health problem might be readily understood by the general public. Much of the information contained therein will prove of interest to the oculist, physician and surgeon, and the publication may be used in part or in its entirety by any one desirous of presenting the subject of trachoma through the medium of an illustrated lecture. Nearly one hundred lantern slides to illustrate the text have been prepared from photographs taken by the author or loaned by the United States Public Health Service, the United States Indian Service, et al. Copies of these slides may be purchased at cost from this committee, or will be loaned without charge other than transportation expenses. A copy of the publication will be sent free to any physician upon application to the National Committee for the Prevention of Blindness, 130 East 22nd Street, New York City.

EUROPEAN WAR NOTES.

WAR RELIEF FUNDS.—On January 15, the totals of the principal New England relief funds for the European War reached the following amounts:

Jewish Fund	\$2,381,743.00
Belgian Fund	87,902.95
American Ambulance Fund	71,616.58
Serbian Fund	61,627.19
Allied Fund	51,791.80
British Imperial Fund	43,312.40
French Wounded Fund	38,353.51
Armenian Fund	28,639.25
Surgical Dressings Fund	16,897.00
La Fayette Fund	16,179.99
Polish Fund	15,411.83
Italian Fund	14,723.55

BOSTON AND NEW ENGLAND.

THE WEEK'S DEATH RATE IN BOSTON.—During the week ending January 15 there were 327 deaths reported, with a rate of 22.42 per 1000

population as compared with 235 and a rate of 16.37 for the corresponding week of last year.

There were 43 deaths under 1 year as compared with 26 last year, and 115 deaths over 60 years of age against 84 last year.

During the week the number of cases of principal reportable diseases were: Diphtheria 39; scarlet fever 68, measles 50, typhoid fever 3, whooping cough 52, tuberculosis 60.

Included in the above were the following cases of non-residents: Diphtheria 5, scarlet fever 8, measles 1, whooping cough 2, tuberculosis 6.

Total deaths from these diseases were: Diphtheria 7, scarlet fever 2, measles 1, whooping cough 2, tuberculosis 22. Included in these were the following non-residents: Diphtheria 3, scarlet fever 1, tuberculosis 3, whooping cough 1. Deaths from influenza were 19, and pneumonia 73.

MASSACHUSETTS HOMOEOPATHIC HOSPITAL MATERNITY BUILDING.—On January first the new maternity building of the Massachusetts Homoeopathic Hospital was formally opened and dedicated. It is the gift of Wallace F. Robinson, who desired it to be a memorial to his wife, for whom it is named, the Jennie M. Robinson Memorial. The building is of limestone and brick, built fireproof throughout, and is planned to incorporate every device and appurtenance desirable in a modern hospital. There are provisions for seventy-five beds, including wards and private rooms. During the last calendar year there were 1162 obstetrical cases admitted to the Homoeopathic Hospital, and from twenty to forty cases were refused every month for lack of accommodation. Although the new building may not be able to take care of all the cases presenting themselves, every opportunity is afforded for the most efficient care of admitted cases. The first and second floors of the building are used for out-patient purposes. Wards and private rooms occupy the upper floors, and a roof garden is built on top, with elevator service. A special room has been provided for twilight sleep cases. The dedicatory exercises were held in the entrance hall of the hospital. Dr. William Francis Honan, chief surgeon of the Metropolitan Hospital of New York made an address. Dr. Henry M. Pollock of the Norwich (Conn.) State Hospital is to be superintendent and Dr. Edwin R. Lewis, assistant superintendent.

EXPERIMENT IN OPEN-AIR SCHOOLROOMS.—Winchester, Mass., in September, 1914, began the experiment of an open-air schoolroom. A seventh grade class was installed in a room which, although it was not built for the purpose, was so altered that a full supply of fresh air could be admitted. The temperature was kept at about 45° F., and the work taken up was of the ordinary character. The clothing, which consisted of blanket coat and bloomers and lined canvas boots, was furnished by a local organiza-

tion, the Fortnightly. Admission to the class was on the request of the parents, and it was not intended primarily for sickly children. At the end of the four months comparative weights and measurements were made up with the pupils in another seventh grade class in the same building, who were in an ordinary room and who, presumably, were under the same general conditions of health, home and environment. The results are most interesting. The average gain in weight of the open-air class was 3.61, that of the other class, 1.69, a difference of 1.82 in favor of the former. In height, the open-air class gained .49 and the other class .24, a difference of .25. In the hemoglobin test the open-air class gained 4.55% and the other class lost 3.07%. A loss of percentage of blood corpuscles usually occurs during the school year, and the gain of the open-air class is of especial significance.

CHICKERING HOUSE FOR CONVALESCENTS.—The recently published annual report of Chickering House, Dedham, records a total number of patients cared for from October 1, 1914, to October 1, 1915, of 369. Dr. J. W. Pratt, visiting physician, states that a large percentage of the patients admitted have been either medically or surgically ill at their homes or at some hospital, and are received at the House for a period of convalescence. He further states that the services of a visiting physician seem to be required more during the first few days following the patients' admission than later, that they soon respond to the influence of their surroundings and benefit from the restful life, excellent hygienic and other wholesome conditions found at the Home. He considers this improvement in health of the patients so marked as to be of medical interest and importance.

NEW ENGLAND PEABODY HOME FOR CRIPPLED CHILDREN.—The report of the New England Peabody Home for Crippled Children for the years 1912 to 1914 shows a continuance of development and progress at much the same rate as in the past. The history of the institution has been a steady development from the time when it was housed in a small farmhouse at Weston until now, when it occupies a fairly well equipped modern building constructed for its use. The efficiency of the institution has increased in proportion to the improvement of its outward appearance. It has ceased to be a place where incurable and hopeless cases are sent to finish out their wretched lives, and has become an institution where cripples may go to be educated and helped, and perhaps cured. Expenses have inevitably increased correspondingly, and as the institution is wholly dependent upon voluntary subscriptions for its maintenance, gifts of money cannot be better placed where they will go farther to alleviate suffering and promote the usefulness of disabled children. One of the therapeutic agencies used in the care of

tuberculous children, and one which has produced most satisfactory results is heliotherapy. The introduction of heliotherapy has marked a distinct advance in the treatment of tuberculosis of the bones, which the Home was the first institution in Massachusetts to adopt. Of five children receiving full treatment, four have shown marked improvement. Others receiving partial treatment have made good progress. Further results in the use of this treatment will be of much value and much may be expected from it.

MILK AND BABY HYGIENE ASSOCIATION.—A preliminary statement issued by the Boston Milk and Baby Hygiene Association, shows that during the year 1915 it has cared for 4,800 babies at its twelve milk stations, as compared with 4,097 in 1914. But for the epidemic of acidosis and respiratory infections at the close of the year the total annual infant death rate would have been less than in 1914. As a result of this epidemic, however, the estimated infant mortality for 1915 will probably be between 104 and 105, as compared with 103 in 1914.

ESTABLISHMENT OF ANTI-TUBERCULOSIS SOCIETIES.—The Massachusetts Anti-Tuberculosis League has issued a statement signed by Allan J. McLaughlin, M.D., Commissioner of Health of Massachusetts; Arthur K. Stone, M.D., Chairman Trustees of Massachusetts Hospital for Consumptives; and Vincent Y. Bowditch, M.D., President Massachusetts Anti-Tuberculosis League, in which it endeavors to offset an impression prevalent, that because of the construction of tuberculosis hospitals and the maintenance of tuberculosis dispensaries there is no further need for anti-tuberculosis work. They state that active coöperation of anti-tuberculosis associations with state and local authorities is necessary, and will continue to be necessary, as long as tuberculosis exists. They urge the establishment in every community in the state of an organization of this kind, either as an independent body, or as a committee of some already existing organization that is interested in health or civic matters.

There are in this State some good laws which, if made effective, will help materially in reducing the ravages of tuberculosis. A representative organization, such as an anti-tuberculosis association, is in a position to see, not only that these laws are enforced, but also that sufficient appropriations are secured, without which it is difficult to do effective work, for the maintenance of local and state departments.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR DECEMBER, 1915.—There was a considerable increase in the total number of cases of communicable diseases reported to this Department during the month of December, 1915, as compared with the same month last year. This increase has been due almost en-

tirely to the increased prevalence of whooping cough and measles. The striking feature of the December mortality returns is the number of deaths from diphtheria, measles, typhoid fever and whooping cough.

Diphtheria seems to have been unusually virulent. During November, 1915, there were 1098 reported cases, with 65 deaths, while in December, 1915, there were 942 cases, with 80 deaths. This may be partly accounted for by incomplete reporting or failure to administer antitoxin early enough.

The fatality rate of measles during December was almost double that of November. In November there were 664 cases, with 5 deaths, while in December there were 1148 cases, with 16 deaths. This number of deaths again calls the attention of all health workers to the importance of measles as a dangerous disease. However, this number of deaths does not give any adequate indication of the amount of damage done by this infection.

With 136 reported cases of typhoid fever, there were 17 deaths during the month of December. This is an unusually high mortality for this disease.

Whooping cough accounted for 20 deaths during December. While the mortality from this disease was not as high as during November, it caused almost three times as many deaths as it did for the month of December, 1914.

The distribution of the increased prevalence of the various communicable diseases in the Commonwealth is of considerable interest. While the numerical increase of cases is due to the diseases named above, some of the other communicable diseases are of particular importance. Diphtheria, scarlet fever and typhoid fever were present in a number of cities and towns in unusual amounts.

Chicken-pox was reported in unusual numbers from the following cities and towns: Brockton, Brookline, Cambridge, Lancaster, Orleans, Pittsfield and Springfield. This is of particular interest to health officials only on account of its relation to smallpox.

Measles is markedly on the increase in various parts of the State. Some of the places in which it is present in the greatest amounts are as follows: Brookline, Chelsea, Lawrence, Lynn, Salem, Saugus, Winthrop and Webster.

Whooping cough is present in unusual numbers in the following cities and towns: Cambridge, Natick, New Bedford, Newton, Pittsfield and Somerville.

Scarlet fever is unusually prevalent in the following cities and towns: Arlington, Brookline, Cambridge, Lawrence, Leominster, Lowell, Lynn, Springfield and Winthrop.

While diphtheria has decreased somewhat in amount, it still remains important in many cities and towns. Among these are: Brookline, Cambridge, Fall River, Fitchburg, Haverhill, Lawrence, New Bedford, Newton, Orange, South-

bridge and Springfield. While in Lynn and Worcester it is still present in considerable numbers, it seems to be declining.

The only important focus of typhoid fever in the State is at Fall River.

During the month of December there was a sharp increase in the number of cases of typhoid fever reported from Fall River. Most of the cases were located in the south end of the city. An investigation into the source of the infection shows that almost all of these cases had received their milk supply from one collector, whose place of business is in Rhode Island. The Fall River Board of Health took prompt action and arranged to have this milk supply pasteurized under their supervision. The State District Health Officer reports that the situation is apparently under control.

During the month one case of amebic dysentery has been reported from Cambridge, one case of tetanus from Northampton, and one case of actinomycosis from Somerville.

Massachusetts Medical Society.

SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.—It is announced that the meeting of the Surgical Section of the Suffolk District Medical Society, previously scheduled for March 22, has been changed to Wednesday, March 8. At this meeting Dr. E. Starr Judd of Rochester, Minn., will present for discussion the subject of chronic cholecystitis. A complete program of this meeting will be published in a later issue of the JOURNAL.

Obituary.

JAMES CLARKE WHITE, M.D.

DR. JAMES CLARKE WHITE, who had been in failing health for nearly a year, died at his home in Boston, January 6, 1916, aged eighty-two years. The son of James Patterson White and Mary Ann (Clarke) White, he was born at Belfast, Me., July 7, 1833, and was graduated from Harvard College in 1853, in the class with Charles W. Eliot, James Mills Pierce, and Justin Winsor, and from the Harvard Medical School in 1856. During the next two years he was studying diseases of the skin at Vienna and elsewhere in Europe, and on his return to Boston he was made instructor in chemistry in the Harvard Summer School, being chemist to the Massachusetts General Hospital in 1863, and adjunct professor of chemistry in the Medical School from 1866 to 1871. In the latter year he

established in the Harvard Medical School the first professorship of dermatology in any medical school in the country, and occupied the professorial chair for thirty-one years. On his retirement in 1902 he was made professor emeritus.

Dr. White is remembered by a generation of medical students as a clear and convincing lecturer, and as one who handled his skin clinic at the Massachusetts General Hospital with consummate skill and precision. One can see him now, tall and commanding in presence, scrupulously neat in personal appearance, managing a wealth of dermatological material with rare ability, giving definite instructions to the patients, and, at the next clinic, making careful inquiries, for the benefit of the class, whether the instructions had been carried out.

Dr. White was the first president of the American Dermatological Association, was one of the incorporators of the Boston Medical Library Association in 1877, librarian of the Massachusetts Medical Society from 1864 to 1872, orator of this society in 1890, and president from 1892 to 1894.

Besides being physician to the department of skin diseases at the Massachusetts General Hospital from 1870 to 1903, he was a fellow of the American Academy of Arts and Sciences, member of the New York Dermatological Society, and president of the International Dermatological Congress in 1903, foreign honorary member of the Dermatological societies of London, Berlin, Vienna, and Italy, and corresponding member of similar organizations in France and Argentina. During the early years of his practice, from 1863 to 1867, he was editor of the BOSTON MEDICAL AND SURGICAL JOURNAL, and throughout his professional career many of his numerous articles, on dermatology for the most part, were published in the columns of this periodical. Two years ago he published "Sketches from My Life."

Dr. White was a member of the Somerset and Harvard Clubs, and of the Boston Society for Medical Improvement. His wife, who was Miss Martha Anna Ellis, of Boston, died in 1888. He is survived by two sons, one of them being Dr. Charles J. White, of Boston, and by eight grandchildren.

Correspondence.

EPISIOTOMY: AN AUTHOR'S REJOINDER.

Boston, Jan. 5, 1916.

Mr. Editor: In reply to a criticism of my views on episiotomy by "Obstetricus", published in the Correspondence column of the JOURNAL of Dec. 30, 1915. I should say that not alone "Obstetricus" but others who have spoken to me personally have apparently not understood my position with regard to episiotomy. I stated clearly in conclusion No. 3 in my paper that "It should not be performed except to prevent a complete tear, because incomplete perineal tears heal as

well as the episiotomy wound and are less difficult to suture."

Dr. Phillips, whose paper is criticized rather severely by Dr. Herbert Spencer in a letter to the *Lancet*, quoted at some length by "Obstetricus", advocated a much more extensive use of this procedure.

Dr. Spencer takes Dr. Phillips to task for stating that "Parvin was one of the earliest advocates of episiotomy in America," Dr. Spencer quoting an adverse opinion from the 1906 edition of Parvin's *Science and Art of Obstetrics*. "In point of fact Parvin in 1882 (*Trans. Amer. Gyn. Soc.*, 1882, vii. 145), while not an over-enthusiastic advocate of episiotomy, criticized a statement by Playfair that tears of the perineum are always clean and linear in the following words: "Ragged rents of the perineum sometimes do occur and besides episiotomy might save the sphincter" (Italics ours).

Dr. Spencer's slur upon Drs. Manton and Broomall as being "unknown to me as obstetrical authorities" is regrettable. In the case of Dr. Manton at least it displays his unfamiliarity with American obstetrical and gynecological literature.

I should agree with Dr. Munro Kerr that, sticking to my one indication, fortunately "it is an operation which is rarely required."

I must, however, take issue with Dr. Dakin's statement that "A tear made by the head, if properly sutured, heals most satisfactorily even when it extends into the rectum." I can recall a number of instances of complete lacerations of the perineum repaired by different obstetricians of ability which have failed to unite. Furthermore, after primary suture of a complete laceration of the perineum there not only is required the most exacting care to secure union, but the interference with proper regulation of the bowels and the necessary restriction of the diet disturb the puerperium and the patient greatly.

Finally, I should add that it is especially desirable to avoid complete perineal tears in patients who can not obtain skilled aftercare, as in out-patient clinics and patients attended by untrained nurses, and it is in these patients that episiotomy will be most frequently indicated.

Very truly yours,
JOHN T. WILLIAMS, M.D.

A RED CROSS SURGEON IN RUSSIA.

(From Our Special Correspondent.)

SARATOW, RUSSIA, Nov. 21, 1915.
Dec. 4.

Mr. Editor: To say that I was sorry to leave Budapest is expressing it too mildly, so I shall leave you to imagine my feelings on taking leave of the warm-hearted Hungarians and the hospital work that I had enjoyed so much. Doubtless you have heard of the decoration and honor bestowed on us for our services there; but even more precious to us were the good wishes of those who sent us to care for their compatriots and relatives held by the enemy.

Our journey to Russia was made very comfortably, taking in all only fourteen days, and of these we spent seven in Berlin and three in Stockholm. Reaching Petrograd on October 3, we remained there for ten days during which we saw much of the city. Thence we went to Moscow for a stay of sixteen days and thence southward to Saratow where I have been since October 29th.

The weather here is fine, cold and brisk, and for seeing this wonderful country this is the most desirable as well as the healthiest time of the year. Having struggled with the mastery of German and Hungarian, I am now endeavoring slowly to learn Russian, but it is not, to my ear, a flexible or musical language. The circumstances under which we work here are far from being the most comfortable, and the maintenance of cleanliness one of our most difficult problems.



American Red Cross Hospital at Budapest, Hungary.

I enclose for your interest a photograph of the Spital where we worked at Budapest. I am sorry that I could not write more of the work while at Budapest, but it was forbidden by the Washington authorities.

Saratow, where we are at present stationed, is on the Volga river, some distance north from Astrachan, which is at its mouth.

Very truly yours,
RICHARD METCALF, M.D.

AN EARLY MUSEUM SPECIMEN OF RUPTURED APPENDIX.

31 MASSACHUSETTS AVENUE,
BOSTON, JAN. 7, 1916.

Mr. Editor: In the catalogue of the Musée Dupuytren at Paris occurs the following note:

"Caecum—No. 450. Musée Dupuytren. In this specimen, the origin of which is unknown, one sees that there is a perforation of the tip of the vermiform appendix of the caecum, from which there has been an outpouring into the peritoneal cavity."

As Orfila had estimated that there were 1000 specimens in the Museum in 1842, it is impossible to judge, even approximately, of the actual age of the specimen, but in all probability it was placed there between 1835 and 1842.

Very truly yours,
WM. PEARCE COUES, M.D.

Miscellany.

NOTICE.

MASSACHUSETTS GENERAL HOSPITAL.—The Pay Consultation Clinic about which a preliminary notice was published in the *JOURNAL* on December 30, will open on Tuesday, January 25, 1916, at 2 P.M., in the Out-Patient Department Building on Fruit Street and continue each following Tuesday and Friday afternoon excepting holidays. A patient must reach the Clinic before 3 P.M. unless special arrangements are made in advance and must be accompanied by his physician or bring a letter from him. It is intended that the services of senior members of the hospital staff and chiefs of service will be available at these Clinics. At the time of consultation advice as to the treatment will be given the physician, if he desires. The departments to be represented are:

Medicine.
Genito-Urinary Diseases.
Laryngology.
Diseases of the Eye.
Syphilis.
Neurology.

Surgery.
Orthopedics.
Diseases of the Ear.
Children's Diseases.
Dermatology.

SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY.—The forty-first meeting of the New England Pediatric Society will be held in the Boston Medical Library, Friday, February 4, 1916, at 8.15 P.M.

The following papers will be read:

1. "Fractures of the Elbow in Children," with lantern slides. Dr. William E. Ladd, Boston.
2. "Physical Types—Dietary Control and Preventive Medicine." Dr. John Bryant, Boston.
3. "D'Espine's Sign in Childhood." Dr. John Lovett Morse, Boston.

Light refreshments will be served after the meeting.

A. C. EASTMAN, M.D., *President*,
RICHARD M. SMITH, M.D., *Secretary*.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, Jan. 25, at 8 P.M., sharp.

Business.

Communication: "Talks on Experiences with the Harvard Unit in France during the Summer of 1915." Illustrated by stereopticon. Walter A. Lane, M.D., Orville F. Roger, Jr., M.D.

BRADFORD KENT, M.D., *Secretary*.

MASSACHUSETTS GENERAL HOSPITAL CLINICAL SOCIETY.—Meeting in Out-Patient Building Amphitheatre, 7.15 P.M., January 24, 1916.

1. Demonstration of Cases.
2. Hodgkins' Disease—Infectious Etiology
Dr. M. Smith-Petersen.
3. The Role of the Lymphocyte in Disease.
Dr. John J. Morton.

The visiting and administrative staffs, physicians, surgeons and students are cordially invited.

ELLIOTT C. CUTLER, M.D., *Secretary*.

CHILDREN'S HOSPITAL.—Clinical Meeting. The visiting staff of the Children's Hospital will hold a clinical meeting at the hospital, Friday, January 21, 1916, at 4.30 P.M. Physicians and students are invited.

HAROLD C. ERNST, M.D., *Chairman*.

THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES.—The Fourth Annual Session of the Federation of State Medical Boards of the United States, will be held at the Congress Hotel, Chicago, Monday, February 7, 1915, at which the following program will be presented:

1. Address of the President.—Dr. Charles H. Cook, President Massachusetts Board.
2. What the Federation Could Accomplish.—Dr. Otto V. Huffman, Long Island College Hospital, Brooklyn.
3. Regulation of Drugless Practitioners.—Dr. George H. Matson, Secretary Ohio State Board, Columbus.
4. Standardization of Hospitals.—Dr. J. M. Baldy, President Pennsylvania Bureau of Medical Education and Licensure, Philadelphia.
5. A National Examining Board.—General discussion.

This conference promises to bring together a large and representative attendance of the members of the Federation and physicians interested in maintaining high standards of medical licensure.

The Federation of Medical Boards of the United States.
WALTER L. BREKING, M.D., *Secretary*.

RECENT DEATHS.

DR. ISAAC OTT, a neurologist of note, died at his home in Easton, Penn., on December 31, at the age of 69 years. He was at one time president of the American Neurological Society, and dean of the Medico-Chirurgical College, Philadelphia, Penn.

DR. HENRY H. ATKINSON, for fourteen years a medical missionary at Harpoot, eastern Turkey, died at that place on Christmas Day of typhus fever. Dr. Atkinson was a graduate of Cooper Medical College, San Francisco, Cal. He leaves a widow and four children, all in Harpoot.

DR. JOSEPH CHASE, who died on January 10, at Vineyard Haven, Mass., was born in Boston on May 3, 1817. At an early age he became a sailor and at twenty-six retired a master mariner. He then studied dentistry and practised his profession in Boston for many years. Later he engaged in business. He is survived by three sons, one of them also a dentist.

DR. WILLIAM KELLEY FLETCHER died at the Somerville Home for the Aged, January 13, 1916, aged 87 years. He was a graduate of Dartmouth College in 1860 and of the Harvard Medical School in 1862. He was Act. Asst. Surgeon in the Army from May, 1862, to December, 1864. He had practised medicine in Fitchburg and in Somerville, and was in the real estate business for 20 years. From 1863 to 1876 he was a Fellow of the Massachusetts Medical Society.

DR. EDWARD A. L. FRANÇOIS, who died on January 10 in Chelsea, Mass., was born at New Orleans, La., on October 9, 1836. He studied medicine and served as a surgeon on the United States ship *Osato* in the Civil War. He is survived by his widow and by two daughters.

DR. HENRY C. HACHÉ, who died recently at Somerville, Mass., was born in Cape Breton in 1865. His parents migrated to Kentucky and he received his medical degree from the Kentucky School of Medicine at Louisville. He was a member of the American Medical Association, Massachusetts Medical Society and the Somerville Medical Society. He is survived by his widow and four daughters.

DR. FREDERICK D. SHEPARD died recently of typhus at Aintab, Turkey, where he had been working as a medical missionary since 1882. He was born at Ellensburg, N. Y., obtained his preparatory education at Cornell University and received the degree of M.D. from the University of Michigan. He was widely known in Asia Minor as a skillful surgeon and physician and a genuine and devoted friend to the people.

DR. JOSEPH H. TOWNSEND, who died of pneumonia on January 7 at New Haven, Conn., was born in 1862. He graduated from Yale in 1885 and had been a lecturer in the Yale Medical School. Since 1906 he had served as secretary of the Connecticut State Board of Health.

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE WEEK ENDING JAN. 8, 1916.

Contributions:—

Brooklyn Medical Society, Brooklyn, N. Y.	\$ 25.00
Receipts for the week ending Dec. 25	25.00
Dr. W. C. Cahall, Philadelphia	1.00
Dr. D. S. Lamb, Washington	5.00
Previously reported receipts	\$7,905.86

Total receipts	\$7,930.86
Total disbursements	\$7,310.04
Balance	\$ 620.82

F. F. SIMPSON, M.D., *Treasurer*,
7048 Jenkins Arcade Bldg.,